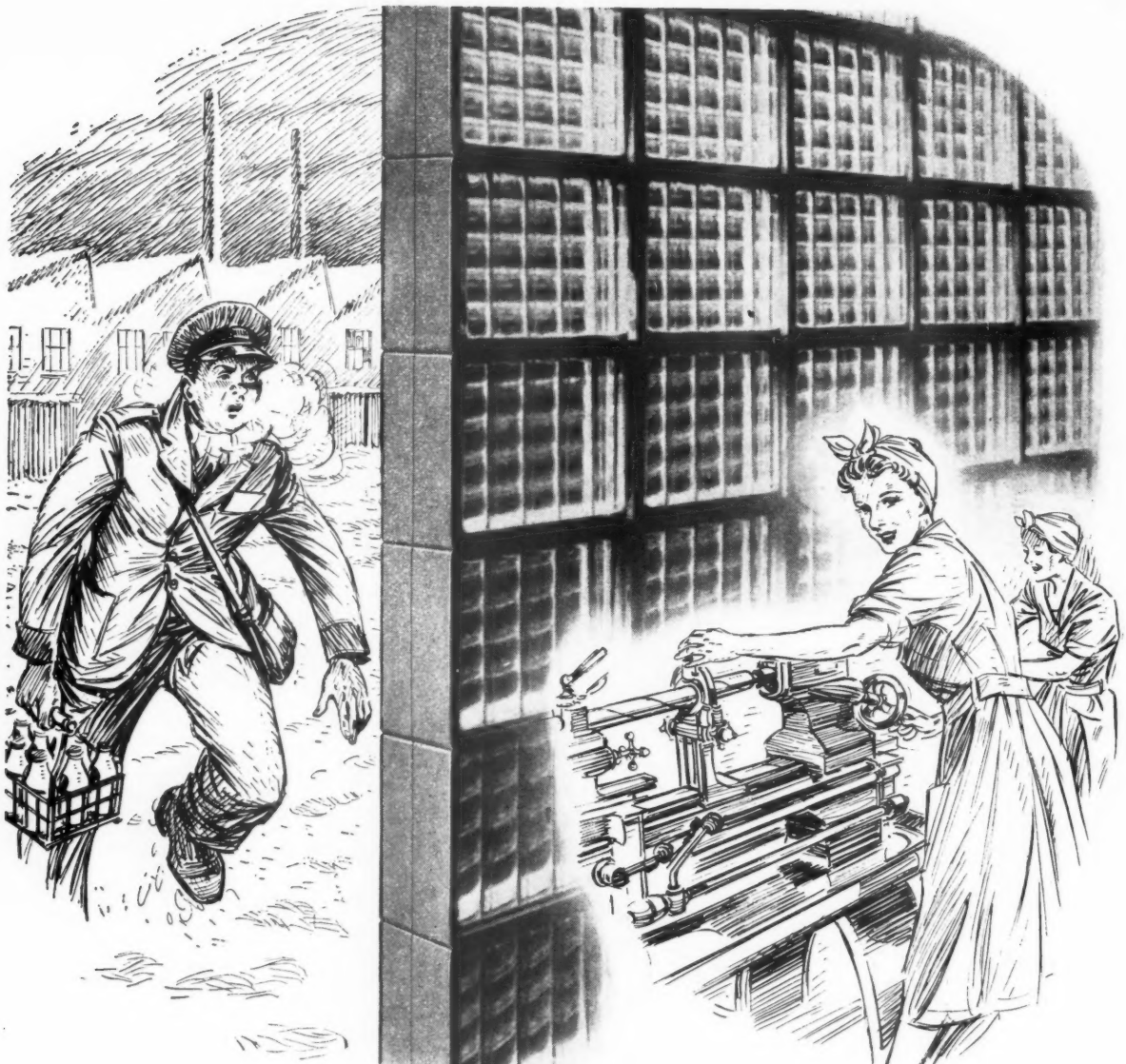
THIRD SERIES VOL. 59 NUMBER 3

THE JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

66 PORTLAND PLACE LONDON W1 TWO SHILLINGS AND SIXPENCE

The Ponte Vecchio, Florence. From an etching by R. H. Ansell, M.C., Past President R.I.B.A.



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THIRD SERIES VOL 59 NUMBER 3 : JANUARY 1952 : 66 PORTLAND PLACE LONDON W1 : TWO SHILLINGS & SIXPENCE

New Year Honours List

Knights Bachelor. Hugh Casson [*F*]. Edward H. Keeling, M.C., M.P. John K. M. Rothenstein, Director and Keeper of the Tate Gallery. Alderman A. Ernest Shennan [*F*].

K.C.B. (*Civil*). Sir Robert Fraser, Deputy Chairman and Secretary, Central Land Board and War Damage Commission.

C.B. (*Civil*). Brigadier F. Higginson, C.M.G. [*A*], Secretary, Imperial War Graves Commission. F. J. Root, Under-Secretary, Ministry of Works.

C.B.E. (*Civil*). W. E. Adams, General Manager, Harlow New Town Development Corporation. Dr. F. M. Lea [*Hon. A*], Director of Building Research. Howard V. Lobb [*F*]. Robert H. Matthew [*A*]. Cyril H. Walker [*F*].

O.B.E. (*Civil*). B. S. Townroe [*Hon. A*]. J. W. R. Adams, County Planning Officer, Kent. J. Barber, Head of London Licensing Office, Ministry of Works. G. H. Chettle [*L*], Inspector of Ancient Monuments, Ministry of Works. W. J. Fitt [*F*]. E. C. Godwin [*L*]. R. T. James, Consulting Engineer. H. B. Kerr, Managing Director, James Carmichael (Contractors), Ltd. Miss Jane Lidderdale, Lord President's Office. J. C. Ratcliffe [*A*]. A. V. Robertson [*A*]. Ralph Tubbs [*A*]. Thos. Scott [*F*] (Nigeria).

M.B.E. (*Civil*). Oliver Hill [*F*]. G. A. Sexton [*L*].

Design of Standardised Articles

The Council have been reviewing the question of policy in regard to the design of standardised articles, and in particular the extent to which Standard Specifications should be permitted to prescribe design. The following statement of policy on this matter has been formulated and approved by the Council:

'The Institute is not opposed to standardisation as such. It is not opposed to the formulation of standard designs for fittings and components, the form and dimensions of which would not dictate the design of the ultimate composition. Even in more important details such as windows, the design of which must have a considerable effect on the ultimate composition, the Institute, while averse to the standardisation of design in general, recognises the limitations of modern manufacturing requirements and will give guidance on the standardisation of such details in a manner to admit of the greatest possible variety in combination, and provided always that the present official position is maintained, namely, that the use of British Standards is not obligatory.'

Activities of the Architects' Benevolent Society

This year's repeat performance of the A.B.S. Ball was as successful as its prototype which celebrated the centenary of the Society. The total sum raised from all sources—tickets and sideshows—was £750. For this excellent result the thanks of the profession are due to the energetic Ball Committee under the chairmanship of Mr. C. J. Epril [*F*], to the students of the A.A. School and Regent Polytechnic School who provided the excellent cabaret and built and operated the various sideshows, to the donors of the numerous prizes, to the assessors and entrants in the 'unusual' competition (which we report on page 110), to the many others who gave their time and labour and, specially, to Mrs. A. Wolfe [*A*], the Hon. Organiser.

The sale of pictures and Christmas cards at the Building Exhibition also proved successful ventures. Together they achieved a total profit of £325. Again, gifts and voluntary labour made this possible. Mr. Hugh Montgomery [*Hon. A*] gave the stand at the Exhibition, a large number of architects and some artists presented pictures for sale, and four members designed the Christmas cards without charge. The only costs incurred were for printing the cards (and paying the purchase tax on them) and various minor costs such as postage.

At a lunch to A.B.S. Council members and the architectural press, over which the President presided and at which Mr. Hugh Montgomery was the host, the Hon. Treasurer, Mr. H. S. Goodhart-Rendel, Past President, R.I.B.A., said that the general funds of the Society were overdrawn. They had decided, however, that there was to be no reduction in the Society's benefactions and that they would not turn away any requests for help, trusting in the generosity of the profession to make good any deficit. So if any architect is under the illusion that the A.B.S. has plenty of funds or that the 'welfare state' is doing most of the work, here is his answer. The A.B.S. needs money more than ever before and it should be the concern of every architect to see it gets it.

This brings us to the President's Christmas Appeal, which is still open to those who have not yet sent their donation. So far the receipts have not been up to those of previous years. This annual appeal is the main source of income for the day-to-day benefactions of the Society (the Ball raises funds for the Centenary Appeal for Homes). If every architect were to give a minimum of ten shillings a year the financial worries of the Society would be at an end.

The Royal Gold Medal for Architecture, 1951

His Majesty the King, on the recommendation of the Council of the Royal Institute, has awarded the Royal Gold Medal for Architecture to Mr. George Grey Wornum [*F*].

Mr. Grey Wornum has designed many different types of buildings, his best known being the headquarters of the R.I.B.A. This building was the subject of a competition in 1932, open to members, in which Mr. Wornum's design was placed first from among 284 entries. In 1938 he was awarded the London Architecture Bronze Medal in respect of his Highways Depot of the City of Westminster. His other work includes the First Class accommodation in the R.M.S. *Queen Elizabeth*, the Callis Court Convalescent Home at Broadstairs, the British Girls' College at Alexandria, shops for the Gas Light and Coke Company at Leytonstone and for London Electricity Supply at Streatham, street decorations for the coronation of King George VI in Regent Street, Strand, Whitehall and Parliament Street, office buildings for the Electricity Authority at Surbiton and Gas Industry House (with Sir Aston Webb), flats and houses in Kensington, Lambeth, Birmingham, Bayswater and Hamilton Terrace (with A. C. Tripe [*F*]), housing schemes in Dorking, Lambeth and Coventry (with Richard Sheppard [*F*]), the Haig Memorial Homes at Morden, Liverpool, Sheffield, Warrington and Penzance (with Louis de Soissons [*F*]), and the greyhound racing stadium at Clapton (with A. C. Tripe [*F*]). His most recent work has been the replanning of Parliament Square.

He was born in 1888. His maternal great-grandmother was a Rivière, a Huguenot family which has produced five generations of painters. His paternal grandfather was R. N. Wornum, Keeper of the National Gallery.

After school at Bradfield, Mr. Wornum spent a year at the Slade, and was then articled to his uncle, R. Selden Wornum [*F*]. During 1906 and 1909 he attended the Architectural Association evening school, where he won a bronze and a silver medal and a travelling studentship. After working with Messrs. Simpson and Ayrton for a year, he set up his own practice in 1911 at the age of 23. His first jobs were altering city premises and designing work for the Duke of Santo Mauro in Spain.

At the start of the 1914-18 war Mr. Wornum served with the Artists' Rifles and then with the Durham Light Infantry. He was wounded on the Somme, losing his right eye. After the war he went into partnership with P. D. Hepworth [*F*], and with him did much alteration work in the City and West End of London. Subsequently he went into partnership with Mr. Louis de Soissons [*F*], and did much domestic work, including the Haig Memorial Homes. Also with Mr. de Soissons, his was among the six premiated designs for the Million Masonic Memorial Competition. At present he is in partnership with Mr. Edward Playne, D.S.C., A.A. Dipl. [*F*], incorporating the practice of Sir Aston Webb and Son.

The Address to Students

Mr. J. L. Gleave, M.A. [*A*] will be unable to deliver the address to students at the R.I.B.A. on 5 February as he has to be in America at that time. Mr. Robert Matthew, C.B.E. [*A*], Architect to the London County Council, has acceded to the President's request that he give the address instead of Mr. Gleave.

Superannuation Scheme for Assistants in Private Practice

A memorandum on this subject will be found on page 104. All members in private practice in the United Kingdom, both principals and assistants, are particularly requested to read this memorandum and to reply on the post-card enclosed with this JOURNAL. In order that a true assessment of the interest in the suggestion to set up a group scheme may be obtained, it is as necessary for those who are not interested to say so on the reply post-card as for those who are.

The Honorary Associateship

Sir Hector Hetherington, K.B.E., D.L., M.A., LL.D., Litt.D., Principal and Vice Chancellor of the University of Glasgow, has accepted the nomination of the Council to the Honorary Associateship. Sir Hector has done much to foster architectural education both at Glasgow University and earlier as Vice Chancellor of Liverpool University.

The Christmas Holiday Lectures

It is no slight to the many able architects who have given the Christmas holiday lectures in the past to say that Sir Hugh Casson's must have been very nearly the 'best ever.' The children sat entranced while he drew lightning sketches on sheets of paper superimposed on a floodlit board, accompanying his 'act' with a running commentary which was both witty and informative. Accustomed to the schoolmaster's ordinary blackboard efforts, they were clearly immensely impressed by Sir Hugh's facile perspectives in coloured crayon. He began each lecture with a short general talk, then took off his coat and drew, tearing off each sheet as the drawing on it was completed; there were almost sighs of regret when he passed to the lantern slides.

The general title of the series was *Putting on a Show: How the South Bank Exhibition was Planned and Built*. The first lecture dealt with past exhibitions, the second with the design and starting of the South Bank and the third with the last few months and the opening. Sir Hugh treated his highly intelligent and critical audience to a survey of developments in the design of exhibitions and an account of how complex technical, administrative and design problems were solved on the South Bank, and gave a clear idea of how an architect—or team of architects—thinks and works in 'putting on a show.' Someone was heard to say that Sir Hugh's lectures would be of great interest to his brother architects and added that Sir Hugh should never be allowed to lecture again without a paper-covered board and coloured chalks.

Hotel Accommodation at the Conference

The Conference Executive Committee responsible for the arrangements in connection with the British Architects' Conference (25 to 28 June) have made provisional bookings at a number of hotels in Edinburgh to enable members wishing to attend the Conference to make sure of their reservations in advance. Up to date, however, very few members have taken advantage of this arrangement. The Committee point out that unless accommodation is definitely reserved before the end of February, which is the latest that the hotels can hold the provisional block bookings, it will be more difficult later on because the large number of conferences held during the summer in Edinburgh make heavy demands on hotel accommodation.

Members intending to be present at the Conference are therefore urged to apply *at once* to the Secretary, R.I.A.S., 15 Rutland Square, Edinburgh, to make their reservations. A list of hotels is given on page 112.

R.I.B.A. Diary

TUESDAY 5 FEBRUARY 6 P.M. General Meeting. Address to Students: Mr. Robert Matthew, C.B.E. [*A*]. Criticism by Mr. D. H. McMorran [*F*] of work submitted for R.I.B.A. Prizes and Studentships. Presentation of Prizes. (Competition drawings on exhibition until this date.)

SATURDAY 9 FEBRUARY 5 P.M. Exhibition of drawings, etc., by Mr. W. H. Ansell, M.C., Past President, closes.

MONDAY 11 FEBRUARY 6 P.M. Library Group meeting. Mr. H. S. Goodhart-Rendel, Past President, will introduce the drawings of George Edmund Street.

TUESDAY 12 FEBRUARY 6 P.M. Space Frames and Stressed Skin Construction: Mr. F. J. Samuely, B.Sc., A.M.I.C.E., A.M.I. Struct. E.

Expression in Modern Architecture

By Frederick Gibberd M.T.P.I. [*F*]

Read before the Royal Institute of British Architects, 8 January 1952. The President in the Chair

WHEN I WAS SOUNDED about giving this lecture a title was suggested to me which I did not understand. However, I gathered the title didn't matter much providing I talked about modern architecture and about æsthetics. It was expected that there would be young members here tonight, because the prizes were being announced; and there's nothing younger members like better than criticising buildings. When you're older other things begin to get important—like the scale of charges for state-aided housing schemes.

I suspect I was chosen to talk about the appearance of buildings because on the one hand, now that I am middle aged what I say is reasonably safe and not likely to give offence to the older and more august members: and on the other hand, since my work is still published in the ARCHITECTURAL REVIEW, what I say may at least be tolerated by younger members, even though it may be all too familiar.

The words 'modern architecture' I take to mean: that contemporary building which seeks to convey beauty by way of the use of the building, and of the construction of the building, rather than through the application of decorative devices from past architectural styles. That is not to say that a functional building will be beautiful, or that a well constructed building will be beautiful, but simply that beauty develops from the expression of function and construction.

Modern architecture is emerging from its transitional stage—its Jacobean period—to become a generally accepted style with its own characteristics, its own idiom—its own clichés if you like. The South Bank, the Royal Festival Hall, the Trades Union building, the work on the drawing board of almost any architectural student, have sounded the death knell to revivalism. There may be a residue of government buildings to come, but they will be its last expiring gasp.

The word 'expression' in connection with buildings is generally taken to mean what its appearance conveys to us. That is obviously a very wide meaning, which is why I chose it, as it enables me to talk about any aspect of appearance. One may say that architecture expresses the civilisation that made it; its politics, its religious feeling, its economic state, and so on. But to most architects 'expression' in building means the æsthetic expression of individual buildings.

This is a complex, a matrix, of three different aspects of expression: the expression of construction; the expression of use to which the building is put—its function; and the expression of the personality of the designer. Different buildings stress different aspects of these three expressions; construction is dominant in a half-timbered house; function is dominant in a railway station; personal expression is dominant in the work of gifted individuals like Wren and Lloyd Wright.

Gifted designers invent new forms in solving the functional and constructional problems. These, if they become accepted, develop into a series of conventions which are used without question, and which when used in sufficient quantity make a recognisable style. After the initial process of pure invention—the pointed arch, the glass wall—the task in design is the less spectacular one of refining the accepted solutions and assembling them in new ways.

That is the position today.

The first manifestations of a new style always tend to be crude. In the case of modern architecture they have been exceptionally insensitive because the scale has become so large, and because of the use of machines. The task is not only that of using the new forms more sensitively, but of humanising them.

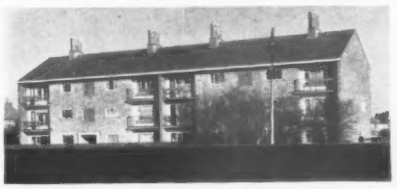
I am not of course suggesting that a new style sweeps away all that has gone before it. In many instances the old conventions are still the right solutions and there is no point in discarding them—I say that in spite of being called a romantic, or a 'new empiricist'. There are, too, many instances where a traditional form may require only slight modification through some minor change in building technique.

Neither do I say that there are not quite new forms waiting to be invented; but I do repeat that the chief task that faces our profession today is to refine, and to assemble in new ways, the forms that modern architecture has given us. Not all of them, because some are too personal to be repeated many times; and some, for one reason or another, aren't worth repeating.

In the past the conventions of a new style were used consistently, for taste and building technique were consistent. But in our present position of social upheaval the characteristic forms of modern architecture are often used without being understood; the superficialities of modern architecture are being applied to building in a crude and often barbarous manner—resulting in what has been called 'modernistic design'. Parallel with the development of modern architecture there has appeared this vulgar and pretentious modernistic building which has no more real affinity with modern architecture than it has with revivalism—and is inferior to either. The battle is not now between modern architecture and revivalism, but between modern architecture and modernistic or 'jazzy' building.

It is necessary to test contemporary clichés and to see whether they have in fact their roots in the expression of function and construction; whether they are being applied in their right context; and whether they are as sensitive in form as possible. This we will now do with some typical modern details.

Continuous wall and window panels held between blank end walls in a house in Illinois by Morgan Yost



Load bearing walls, expression at Alexandra Avenue, Harrow, by Frederick Gibberd. Living rooms contained between parallel walls with the outside wall as an infilling. Bedrooms and service rooms behind load bearing external walls pierced by comparatively small windows

Juxtaposed flat wall and window planes in a house designed by Hugh Stubbins

Expressing the Hole in the Load Bearing Wall (See Diagram 1)

Let us take, to start with, a very elementary problem like placing a window in a load bearing brick wall. How may we express the constructional problem of supporting the brick over the opening?

The traditional solution is, of course, a brick arch—a simple structural solution that has from Wren onwards been given a most extraordinary diversity of æsthetic expressions for so simple a device (A). With the pre-war small house or cottage the room changed in proportion through social changes, and the window changed with it to become wider than its height. The brick arch changed to a row of bricks on edge partially supported by the window mullions (B). The contemporary metal or

Four wall planes of different materials held in space by a flat ceiling plane. House designed by Samuel Glaser and L. L. Rado

wood window is not designed to carry any load; if we see a row of bricks on edge over it we know they are not a lintel, but must in fact be themselves supported. What was once a decorative expression of construction is now only a decoration that makes construction more difficult. If we want the effect of a hole in a plain expanse of brickwork then we can get it quite simply by running the courses straight over the opening and supporting them on a steel angle iron (C).

This now accepted convention has a weakness when seen close to, because the bottom flange makes rather an indeterminate plane between the brick face and the window frame. It is too slight to have much visual significance in itself. Do you assume it is part of the window?—when it puts the other window members out of balance; or do you try in some way to make it look as if it belongs to the wall?

A recent house by Davis and Moro carried the angle right round the opening to form a most attractive frame with a thin edge but this is expensive, and moreover, steel is subject to rust. The obvious solution is to cover the angle by a wood sub-frame or lining, which may be carried right round the opening to underline its shape—a decorative expression evolved from a functional form (D).

The common method of bridging an opening today is of course by the reinforced concrete lintel. The purely functional engineer's solution (E) looks very clumsy and heavy, and there is generally too great a contrast in colour and texture with the brickwork. Some architects use it when the building is colour washed, but they usually cast a pattern on the surface to get the texture more in scale with that of brickwork.

The new form which has developed out of the problem of refining the concrete lintel is the boot lintel (F). This amounts to using the rear of the lintel to support the wall, and cutting back the front to a narrow band to support the facing bricks. (G) illustrates the first stage in its refinement to cut it back at the ends and put it behind the wall face to make it look more like a supporting 'toe', which is what it is, and less like a lintel, which is what it is not. But (G) also shows two common faults: the 'toe' is so deep that it both looks clumsy and conflicts with the brick courses; and the window is set back so far that the 'boot' has a rather heavy square section. Perhaps this is very obvious, but I can show you it featured in a large new block of flats not half a mile from Portland Place.

(H) corrects the faults by making the lintel coincide with the brick course, and bringing the window forward so that the lintel is only a narrow band.

I don't much like the boot lintel, because it seems to conflict with the rectangular pattern of the opening. I prefer to use it with concrete or stone slips down the sides to complete the pattern, as in (J). This often has an additional advantage with steel windows in that the shape of the opening can be underlined—almost an impossibility with the modern narrow section steel window.

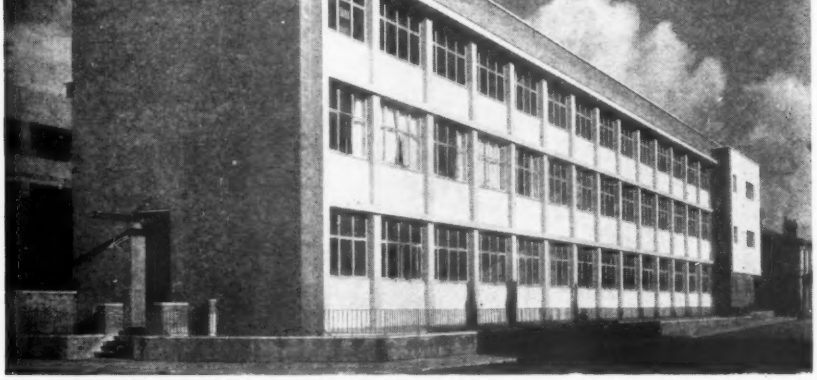
There are many instances where the boot is projected in front of the wall plane to give the effect of a little hood over the window (K). This introduces a new æsthetic problem, that of weathering. It is necessary that the top edge of projecting surfaces should be flashed to prevent soot and rain forming a streaky profile. One of the greatest disservices architects have done to the modern movement is to be careless about the effect of the weather.

So many of our forms today are precise because they are made with the assistance of machinery, and it is absolutely essential that this precision should be retained for the life of the building. The flashings to projecting surfaces (like hoods, canopies, and overhanging concrete roofs) need to be tight sections that throw the water clear and do not conflict with the surfaces they are protecting.

A square end to the lintel tends to look rather clumsy, and most people curve it back, as on the right hand side of the diagram; what looks to me perfectly horrid is just to carry it on past the window and stop it in an arbitrary way (L). Here is the point of departure from modern to modernistic design. As with the recessed boot, the lintel often looks best when it is returned round the complete opening as in (M).

Do not mistake me about this, we are considering a hole in the wall. If, for functional reasons, the window was a long continuous slit there might not be the same need to frame the opening.

The projecting frame can make the window a very dominant object in the wall, and it is usual to reserve it for points of emphasis or punctuation; for example, in a block of flats it might be used for the living room windows, the other rooms having recessed windows. You notice the window in (M) is set back roughly to the centre of the surround. This seems to me to make the projection a bit pointless, and my inclination is to place the window on the front face so that one has a good deep cill inside the frame (N). This gives the equivalent of the bay window; a place to set a



Factory at St. Helens by William and J. B. Ellis, with exposed columns and beams forming a rectangular pattern

pot of flowers, or objects of art such as young ladies straining at the leash with greyhounds. It is, moreover, far more economical than the bay because it doesn't waste floor space and requires no foundations. I tried this out on the B.I.S.F. house at Northolt, where the section was formed in pressed steel, the window consisting of steel cottage sections combined together to form a 6 ft. square bay. It was hotly opposed at the time, but has since become an accepted cliché.

When the projection is large it is necessary to taper the section so that the front edge will not look heavy and clumsy.

There is a special case in which the window might be set at the back of the surround, and this is where the cill is used to support a flower box, as in (O). Apart from this, such setting back can only be justified when it is desired to emphasise the thickness of the wall, or draw special attention to the window. It is a commonplace that the further the window is set in the wall the more massive the building will appear; more of the wall thickness is revealed and deeper shadows are cast into the opening.

It was a characteristic of many early buildings of the modern movement that the window was placed on the wall face; this, by making the wall and window read as one plane, eliminated the effect of mass and expressed the wall as a skin. This is perfectly legitimate when the wall is an envelope, but when it isn't we expect the wall thickness to be expressed.

The usual 2¼ in. set back is perfectly adequate for the usual cavity wall; when the wall is thicker it may sometimes be worth pushing the window further back. Concrete linings are often used to set windows deep, but they tend to exaggerate the opening too much for normal circumstances; the 18th century trick of rendering and painting the reveal is the obvious solution, or alternatively a thin material might be used; they do it perfectly in Italy, where marble is cheap.

In any event I always reduce the width of the projection, as in (P), as apart from making the surround less clumsy it enables a recession to be made between the brick face and the concrete projection—a more subtle arrangement than just projecting straight out from the brick face.

Supposing now the brick wall is rendered, then the obvious way of treating the opening is to carry the rendering over the lintel to form one continuous wall plane. The traditional detail, which I have tried to show in (Q), has the plaster slightly brought out over the window head to form a drip. This is a craftsman's job and is seldom done today.

In the early days of the modern movement many architects rendered the brickwork to make it look like the r.c. wall. It never quite came off because one usually saw a deep reveal through the window; nevertheless a plain rendered brick building does remind one of reinforced concrete, and for that reason I am never quite happy about it. It is a curious case of a traditional use being spoilt by a convention now becoming associated with a quite different modern technique.

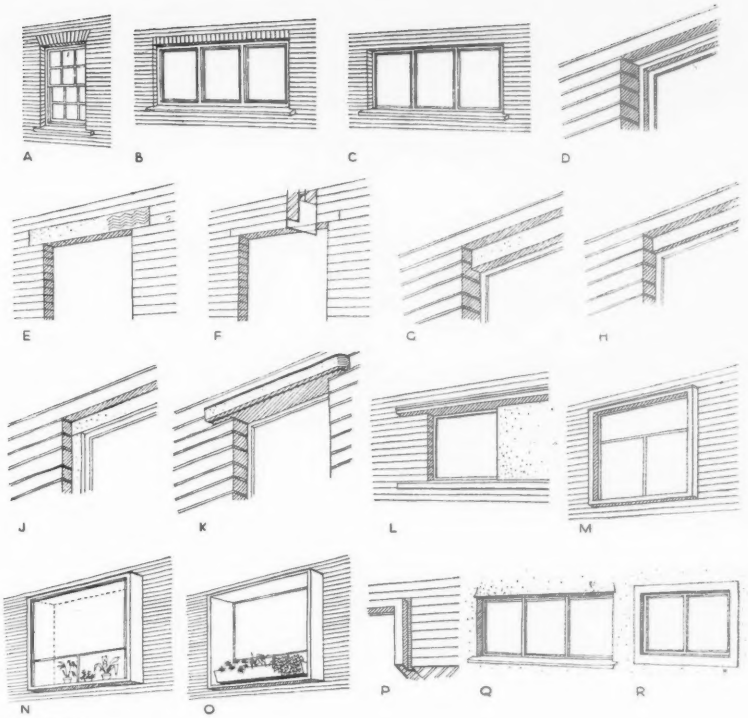


Diagram 1

Sketch (R) shows one traditional method of treating the opening which is quite clearly a rendering technique, and not a reinforced concrete one. It amounts to forming a smooth cement band round the window and painting it a different colour from the wall.

I have only scratched the surface of the problem of the expression of a hole in a wall; but sufficient, I hope, to show what interesting expressions it is capable of. If you think of all the other aspects of detail design—copings, fascias, eaves, balconies, porches, and a host of others—you will agree what a wide field there is for refining the accepted conventions.

Expressing the Load Bearing Wall

When we come to arrange the openings in a load bearing wall we do so as a balanced pattern; a pattern that doesn't confuse the idea of the weight being carried down to the foundations by the wall masses.

In a terrace of small houses with load bearing external walls, there is little difference between the contemporary expression and the traditional ones. The living room windows may be larger, but modern clichés like the corner window or pronounced horizontal or vertical treatments will generally be discarded as being foreign to the structural system.

If, however, we construct the houses by a series of load bearing cross walls, then we arrive at a different expression. In this, the parallel cross wall system, we express the load bearing function of the cross walls (by emphasising the edges, and leaving the end façade as blank as possible) and treat the front elevation as an infilling.

The windows can stretch between the cross walls and the wall under them be designed as a framed panel spanning between the walls. Or the blank panels may alternate between the windows. Both are examples of a typical contemporary expression—a façade with a horizontal direction held and restrained between blank walls: an expression which in this instance makes sense, but is quite meaningless when applied, as it so often is, out of its context.

There are many instances where we may combine the expression of the parallel wall with that of the load bearing external wall.

Expressing the Wall as a Flat Plane (See Diagram 2)

One of the characteristics of modern architecture is the juxtaposition of wall and window for the complete height of a room, and with it the idea of the wall as a flat vertical plane. The complete expression of the wall as a plane is, of course, bound up with the contemporary open plan. That is a plan in which there is an interpenetration of space—a flow between the internal spaces of the building and those outside it. This means, of course, a loss of privacy between the inside and outside. The most numerous and the most complete examples of spatial interpenetration with dwellings occurs with the detached bungalow, for the simple reason that all its rooms are on the ground floor, and all may be in contact with the garden spaces. And it is with this type we

find the most characteristic uses of the wall as a flat plane.

Diagram 2 illustrates some simple points on the use of the wall as a flat plane.

(A) shows the traditional box-like room: a self-contained space body with apertures for light and view.

(B) shows the modernistic room: the ceiling has become lower and the proportions have become more horizontal. Through the desire for greater contact between house and garden, the doors and windows are brought together as a wide opening, which is reflected in the terrace. The r.c. lintel makes such an opening possible.

(C) illustrates the room surrounded by flat planes: the window is brought into juxtaposition with the wall; it extends to the ceiling; and the wall itself stretches out into the garden. The wall is no longer one side of a cube, as in the two previous examples, but a flat vertical plane: a plane which slides the internal space into the external and a plane with space round three edges. We have almost the sense of being able to see both sides of the wall.

The effect is most pronounced when the wall has the same finish inside as out, and since internal materials can seldom be used outside, the tendency is to bring external weathering materials into the rooms themselves. The random stone wall extending into the sitting room, a fireplace wall of facing bricks, are details no first year student can dispense with—and which are fast disappearing from the drawing boards of those in the fifth year.

In the next sketch (D) another window is juxtaposed with the front wall so that the wall becomes a plane with space around all its faces. And we might assume that the internal walls of such a house would be designed as flat planes or screens of different colours and materials. When the wall planes are of different materials the idea of a room being a mere sub-division of a larger space finds its most complete expression. Instead of being surrounded by continuous walls at right angles to each other, and knit together by the lines of the skirting and cornice, we have a series of planes each complete in itself, but held in space by the roof and floor planes.

If you do isolate walls in this way it is important that you do the job properly. For example, if a lintel is necessary to support the roof, as in the next sketch (E), it disturbs the flat roof plane; it breaks into the rectangular pattern of the wall; and it spoils the tensions between the two walls.

So important is it that there should not be a connection between the two wall planes that even a pelmet board may ruin the effect (F). In America it is possible to buy a curtain track which can be built into the plaster, and which has a slide fitting which holds the curtain tightly against the ceiling (G)—an example of mechanical device being invented to solve an æsthetic problem.

I am not, of course, condemning pelmets or lintels across openings, but simply their use with this particular idiom.

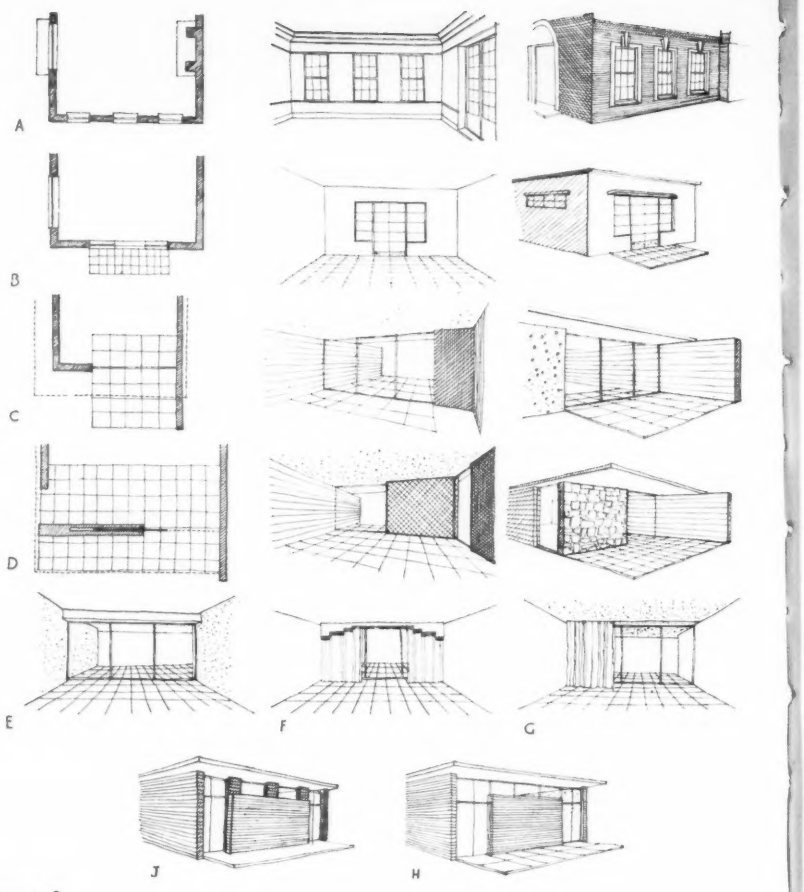


Diagram 2

In this problem of eliminating the lintel, we need to watch that we do not force the structural system into an expression foreign to it. I have seen sketch designs for small houses with isolated load bearing walls and flat roof planes that could not be built.

You will nearly always find that when the space is sub-divided by a whole series of floating wall planes, columns are used as the supporting elements. The columns are usually very slight, like round steel, as this causes the least disturbance to the space. Some of you may have seen published recently details of an American house supported by tubes. Angle irons were welded to the top of the tubes and the floor joists notched on to the angle irons so that the ceiling could be one flat even plane.

If external walls are held apart in space in a horizontal direction, why should not the roof be parted from the wall, so that it too floats as a plane, as in (H)? There is no reason whatsoever, providing always that the wall really is independent of the roof. The floating roof needs supporting columns. To build piers in different coloured bricks, as in (J), is a decadent decorative device. Few of us object to decoration as such, but we never feel really satisfied with it when it is associated with an alien structural method.

Expressing the Multi-Floor Framed Structure (See Diagram 3)

Pyramidal versus slab forms. This brings me to switch to the expression of the function, and of the construction, of multi-storey framed buildings. Since there are so many kinds, we will narrow down our enquiry to a simple office block.

In its simplest possible terms, the functional requirement is a well lit and adequately warmed space, of rectangular shape and free from obstruction. This is usually provided by a long floor space, with windows on one long side and a corridor on the other; which floor space can be subdivided by partitions into rooms of standard depth but varying width. The heights of the rooms and windows are identical on all floors. The depth is seldom more than 24 ft. as at this dimension the light at the rear of the room is generally poor. The width of the building is restricted by the natural lighting and cannot be more than the depth of two offices plus the central corridor (A).

The external elements (shown in B) are: the floor slab; the window, which stretches from column to column so that the lighting is as even as possible; a panel under the windows to hide the legs of the typists (this panel is also sometimes used as a

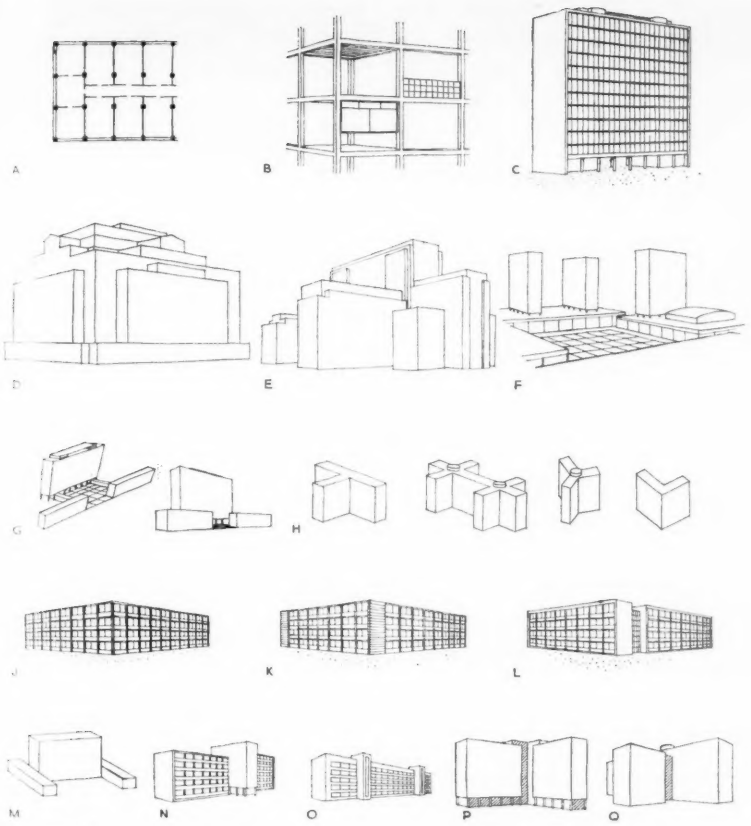


Diagram 3

mounting for radiators, and is required in London as a fire barrier); and finally the structural frame holding these elements in space. The resultant building is a tall, wide, but narrow structure, like a book on edge. The long façades will be a geometric grid of windows and panels, and the end façades (since no light is needed through them) will be a blank wall (C).

It is not necessary for functional reasons for the upper floors to be set back; and it is not only unnecessary for structural reasons, it is bad practice to set them back. The resultant form is absolutely different from the so-called traditional expression of the office building—and, for that matter, many so-called modern ones.

The old form—an expression of mass—is shown in (D). The composition builds up from a broad base by a series of set backs into a pyramidal form. It is an expression neither of a constant office depth nor of a steel frame—imagine building the corners in steel. This building up into an appearance of mass was the main pursuit of many distinguished architects between the wars. Much as one admires Lutyens' skill and ingenuity with set backs, he was in this respect in a blind alley.

We cannot afford the Renaissance box of tricks these days, although I must confess I have seen some surprising things at the Royal Fine Art Commission. But the desire to produce a pyramidal mass-like form is still an obsession with many architects. (E) shows one of the typical forms this produces: although wings project out to get light into the offices, the total effect is still of a solid carved block—a sculpturesque rather than a spatial approach to design.

Now most office buildings require some large, deep meeting rooms, which may be placed on the ground floor in horizontal form, in contrast to the vertical office accommodation. Apart from the splendid opportunities this assembly gives for architectural composition it is of great significance in town design, as it enables two types of spatial composition to be achieved: the building standing in space, as a plastic composition; and the enclosed urban space, formed by grouping buildings together—a piazza or 'space body' as opposed to the plastic body of a building. (F) illustrates the principle: the main office blocks stand in space as towers or slabs, but the lower floors are brought forward and related to each other to form enclosing walls to a civic square.

As architects we have so long had to struggle with the tyranny of the corridor street that we almost take for granted distorted building forms like the flat iron, and the general public have accepted them as a normal expression. But they are not. The logical expression of an office group is an assembly of narrow buildings standing in space with possibly spatial definition at ground level. Such an expression is made possible by the development plan, plus a general understanding of daylighting codes and the floor space index.

Expressing the Wings. When the site is developed in depth it may be possible to assemble the accommodation as a series of slabs as in (G) (based on a technical college I am building). However, many buildings will need to be developed with wings, such as the L, the Y, and the cruciform plan types (H).

The danger with these assemblies is that unless the office-like character of the wings is preserved they may easily indicate a deep or a massive building. For example, if the building is of an L shape and the façade pattern is carried straight round the external angle as in (J) the effect is often of a building with great depth. It is like looking at the corner of a box. But if the individual wings are expressed, say, by making a blank wall for the depth of one wing as in (K), or by keeping the wings apart as in (L), then the way the building works is made quite clear.

It is surprising the varieties of abuse of form that take place with the junctions of the wings. I have seen one block just placed across the end of another, as in (M), giving the impression that it will slide away any moment; or one block charging into another, as in (N); or, again, a long façade broken by violent vertical features, as in (O).

It is nearly always necessary to introduce a negative form between the wings to prevent the façade patterns coming into conflict. There are all kinds of solutions; (P) and (Q) are obvious.

I have not time to consider the expression of the stairs—the most abused element in contemporary building. One would imagine, looking at some of them, that they express a shrine for some fearful god, not the vertical circulation of office workers.

Neither can I deal with the housings of lift motors and tanks, save only to remark that they do need designing; and that it is generally unwise to let their forms break up the rectangular form of the office grid. Obviously, when freely designed on the roof, they give tremendous opportunities for producing an interesting silhouette. How disappointing the United Nations Building is in this respect!

Expressing the Framed Façade (See Diagram 4)

We will now consider some of the more typical elevations that have been evolved for the framed office building. The members are very few: the floor slab, the column and beam, the window and the panel. Which of these elements do we express?

The 'Classic' revival disguise (A) is now out of fashion, but the 'shorn Classic' (B) or the 'Classic-modernistic' (C) are still favoured when a dignified effect is sought.

(B) gets some more floor space by adding a mansard, but sheds the classic trappings. It does however retain the proportions of the classic order, and therefore expresses

the proportions of the rooms behind the façade not the structural frame.

(C) is an improvement, as the windows indicate the even floor height, but they are a 'hole in the wall' rather than a frame expression. The ground and top floors carry on the tradition of the classic rusticated base and attic, but in a modern idiom—the continuous horizontal window pattern and the projecting flat-roof plane. Both are horribly macabre in such a context. You may remember, by the way, that there was quite a run on this particular combination for Town Hall competitions before the war.

Since the office bay is generally wider than it is high, and since we need wide as well as high windows for lighting, it is more logical for the openings to have a horizontal rather than a vertical direction. A single pattern of wide rectangular windows as in (D) is a better expression than the previous examples.

The windows may be joined together vertically by panels of, say, cast iron between them as in (E). This is a favourite expression for telephone exchanges—I have not the least idea why. The building looks to me no more as if it holds telephone equipment than office workers.

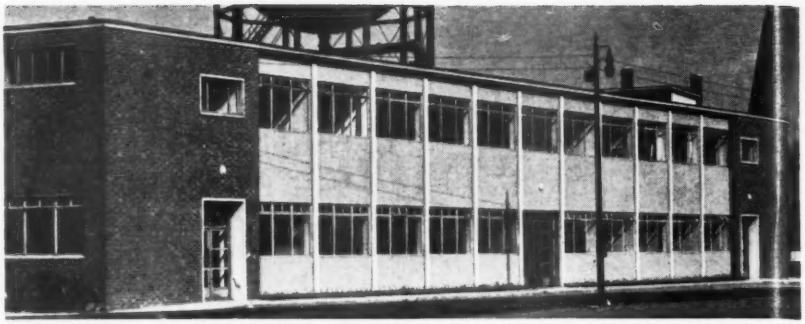
(F) joins the windows horizontally by continuing the lintel and the cill and using a different coloured brick between them—the very popular ham sandwich style. It gives some idea of the horizontal floor space, but otherwise expresses only the commonplace.

All are, I think, unimaginative and feeble. The linking together of the windows seems quite arbitrary and there is no conclusive indication of either the function or the construction of the building. Whether we expose the column or not, I feel we should be made aware of it. And I feel too that the wide window should not be sacrificed for æsthetic effect.

Horizontal or Vertical Emphasis. There were many buildings erected before the war that gave recognition to the column and the wide almost continuous window. The majority of them seemed of two distinct types of expression; one based on horizontal emphasis, the other on vertical emphasis. In the horizontal type the windows pass in front of the column, or are clipped to its face, and the walls are treated as continuous panels supported by the beams. We thus have alternating horizontal ribbons of wall and window, as in (G). With the vertical type (H), the columns are exposed on three sides and run straight up for the full height of the building; the windows are combined with the panels under them to make a series of vertical elements between the columns.

The horizontal type tended to be used for long low buildings like factory office blocks, the vertical for tall ones like skyscrapers, but there have been cases where the horizontal has been applied to tall buildings and vice versa.

It is quite easy to produce arguments that will justify either pattern as being honest expressions of an office block and of a framed structure. Neither is in itself satisfactory as it does not produce a composition which is resolved. Modern architecture is no different from Greek, Roman or Renaissance in its fundamental principles, and one of these principles is that a building needs to be a complete and harmonious whole. For it to be a complete whole its parts need to be balanced. By all means set up a strong horizontal direction, or a strong vertical one, if you like them; but don't do so without setting up movements in the opposite direction to prevent the eye running out of the picture.



Office at Appleby Frodingham Steel Works by Frederick Gibberd. Exposed columns and tile faced panels resolved by brick end walls and a projecting roof slab

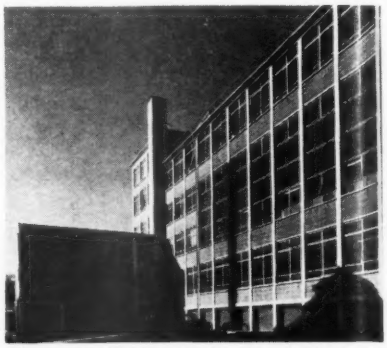
The Pattern Resolved. The usual method of balancing the vertical or the horizontal is to juxtapose a strong element in the other direction—I have already referred to violent and abrupt changes of form. Their impact on each other is often vulgar, always disturbing. Why, anyway, set up a strong movement only to have to break it down again? After all, the pattern of the steel frame is a simple, balanced, rectangular grid. Why shouldn't its fenestration be so balanced?

A functional expression of the framed office is shown in my next sketch (J). It is what Mr. J. M. Richards has called a 'diagrammatic façade', a façade which may be a suitable background to an urban scene. It is not, of course, a complete expression of structure—you will remember Mies van de Rohe in his Chicago flats expressed the diminishing thickness of the columns—and, all told, it is not subtle or interesting enough to sustain our interest.

(K) shows some refinements. First the grid of the façade is contrasted by a blank end wall—a point I have already made. Then the brick panel wall is carried on a nib hung from the floor beam (the boot lintel again). This makes the columns slightly more emphatic in their verticality, and sets up an even rhythm across the façade. The proportion of the panel counteracts the upward thrust of the columns, and there is a regular vertical rhythm between panel and window. The floor is expressed by the horizontal lines of the boot lintel or, of course, the ceiling seen through the windows.

To what extent you express the column, the floor or the panel doesn't, I suppose, matter a scrap, providing that the pattern is reasonably balanced. In (L) the floor slab is brought forward; it has the disadvantage that it provides long ledges for the dust to rest on, and calls for flashing. And in (M) the panel passes in front of the column, but its horizontality is counteracted by the joint lines on the column centres.

In the next sketch (N) the blank end wall is brought to the front façade, and a window placed on the end—as when a staircase is placed in the corner. This is a combination of the wall as a flat plane



Offices at Wallsend, Northumberland, by Richard Sheppard. Exposed columns and brick-on-end panels held between cills and window heads; note board room passing through two floors. *Photo: Architect & Building News*

'The Lawn', Harlow, designed by Frederick Gibberd. The wall exposed on three edges

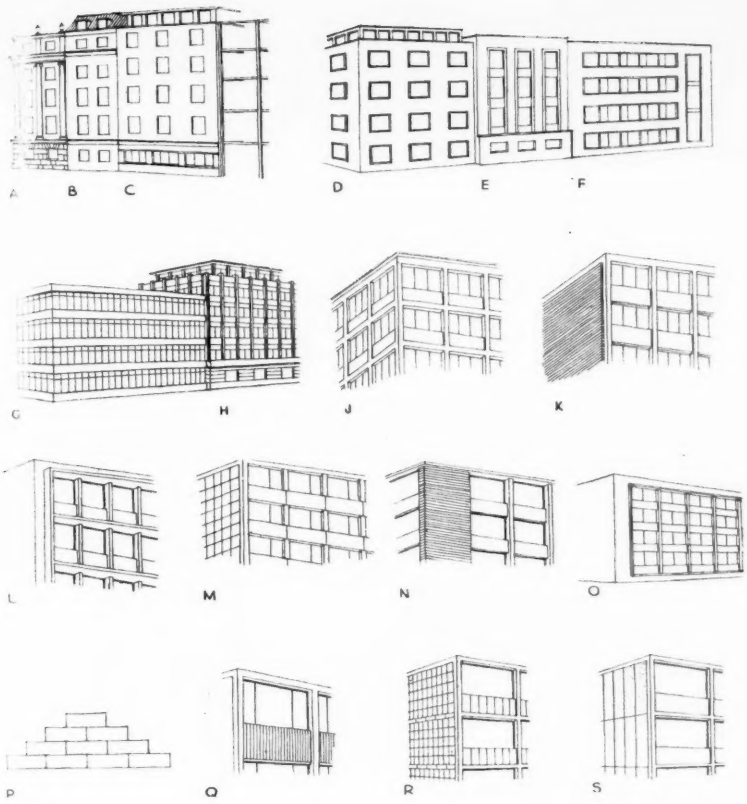


Diagram 4

with the framed façade—a combination which needs very careful handling. For instance, the edge of the flat roof may be in proportion to the main façade, but when carried over the wall it takes on the appearance of a coping and may look too heavy.

This is counteracted when the wall is carried up and returned as a parapet with its own coping, as in (O). The parapet has its counterpart in a brick base, the complete building thus being framed. This is one of the most typical clichés of contemporary design—a geometric grid of window, column and panel, framed in a blank wall.

The Skin Wall. As has been said many times, the wall of a framed structure is only a skin to afford protection against weather. It carries no weight and an honest expression would make it clear that it does not do so. Because of their excellent weathering qualities, many frames are clad in brick or stone. While it is generally quite clear that these materials do not support the weight of the building, they are by tradition associated with this function. Apart from the density of the surface, it is the interlocking pattern of the joints that makes the wall look load bearing.

As (P) tries to show, the staggered perpends appear to carry the weight down to the ground; or conversely, there is a pyramidal building up of mass—a reflection of the pyramidal form of the large load bearing building I have already illustrated. The purist designing a brick panel wall is likely therefore to use a bond which avoids a pyramidal pattern, such as a herringbone or brick on end, like (Q).

Although stone is bonded into a brick backing in many framed buildings, this is obviously less economical than applying it in slab form. With the stone reduced in thickness to a slab it may be larger in area, and this, together with the greater freedom in assembling the slabs, makes it quite easy to devise a skin-like pattern. Most designers use a plain rectangular pattern for panel walls, as shown in (R), as this is furthest removed from solid block patterns, but in the large blank end façades all kinds of patterns have been devised. A favourite system is to break down the area into a series of panels reflecting the frame, and therefore the front façade.

The very fact that a building is veneered with slabs is a suggestion that it is framed, as few people would apply an expensive veneer to our load bearing material, brick. The Ideal Boiler and Radiator building in Great Marlborough Street might be of solid construction, but its black marble facing indicates that it is not.

The use of a pre-cast concrete slab faced with a material that will weather, like broken brick, avoids building the panel wall in two operations; and as the concrete can be both reinforced and lifted by cranes, it is possible to have large units spanning between the structural members.

(S) shows vertical units on an end wall. An actual example is Anthony Chitty's flats for Ho.'orn and St. Pancras. And F. R. S. Yorke in his schools has worked out a series of designs with the slabs laid horizontally.

As a general principle, one may say that, all things being equal, the more the surface looks like a skin or veneer, the more the design will express the idea of a framed building.

The Façade as a Sub-Frame (See Diagram 5) The most complete expression of the skin takes place when the window plane is identified with the wall plane—when the two surfaces merge together as one overall pattern: for example, when the whole façade is treated as an overall lattice in which are inserted glass or wall panels as necessary (D). The all-glass façade is the extreme example, however, although our urban scenes are so chaotic that one might welcome the intrusion of some straightforward diagrammatic façades. Glass is too cold and unsympathetic a material to form the major background to our city centres. I know the arguments about the façade reflecting sky and trees, but that does not compensate one for the loss of natural surfaces like brick, stone, wood and marble.

The æsthetic significance of many all-glass façades rests not in the glass so much as in the fact that the wall and the window merge together to form one continuous plane, independent of the main structural frame. We can substitute opaque or textured materials for the glass panels under the windows proper, and have the maximum impression of the skin-like character of the wall. A wall or curtain of this nature may be mounted in front of the structural frame to become a sub-frame and, providing it reflects the structure behind, it is a quite legitimate system of design. Moreover, it is one that is capable of being much more elegant than a design which utilises the main carcase.

Columns and beams in a steel or reinforced concrete frame are large members to reconcile with those of the windows, but the members of the sub-frame only have to support light materials and then only for the height of a single floor. Furthermore, the complete sub-frame can be manufactured off the site, and so its precision in form and its tolerances in assembly can be altogether finer.

The façade can become a light and elegant structure—but alas, how expensive it can be, and how few materials we have to make it from! There is a fortune waiting for someone who can invent a light-weight panel with interesting colour, texture and weathering qualities at a reasonable price.

Most curtain walls remain on the drawing board, and then to a very small scale. Perhaps it is just as well, as few of them could be built. Could I suggest that no small-scale elevation is produced without being accompanied by detail designs of a typical bay, complete with specification?

Revealing Part of the Frame

A framed structure gives the maximum opportunity for letting the external space penetrate the building. A section of the

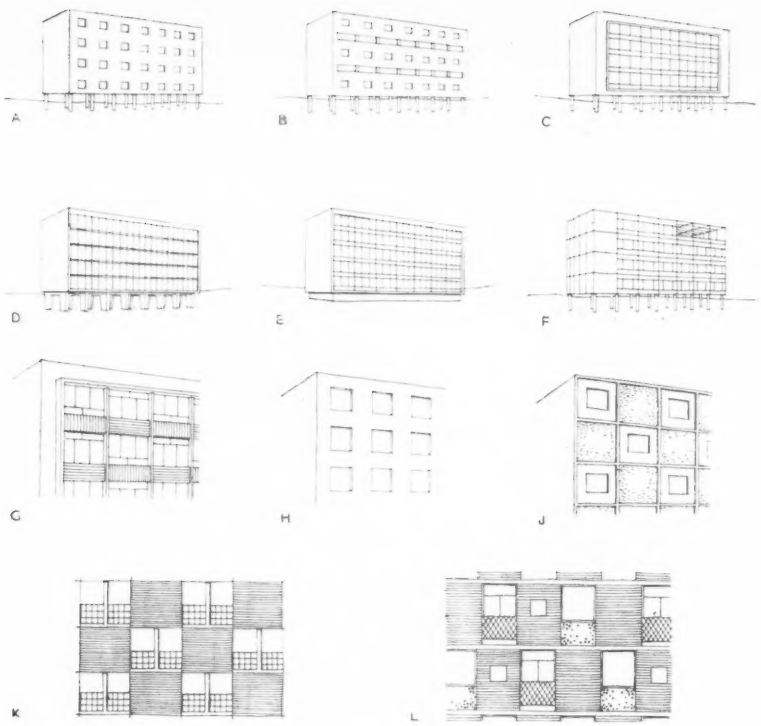


Diagram 5

envelope is omitted and the outside air flows into the building around the exposed frame. This happens most frequently at the ground floor level. This is left open, or only lightly enclosed by screens, so that the building appears to stand on columns.

All kinds of arguments have been put forward for standing a building on stilts—to get it clear of ground mists is one of the most ingenious—but most of the arguments are simply excuses for æsthetic effect. What a reflection on our civilisation that we have to produce a practical reason for doing something which gives pleasure to look at! Fortunately, building science has given us a jargon incomprehensible to the layman which can be used as a cloak for æsthetic effects.

The only functional justifications I can think of are when the ground floor rooms are of a difficult or free shape; or when it is desirable to have spatial extension with the surroundings. If the ground floor is dissociated from the rest of the building there is far greater freedom in arranging the entrance halls and waiting rooms, and far greater freedom in linking the floor with the surrounding floors.

Whether we have a practical justification or not for raising the building on columns, there is no doubt that the device can give extraordinary grace to the building through floating it in space, and no doubt that it alone can be made to express the structural system. Consider, for example, (A). This is meant to represent the corridor side of a framed building; the wall with its tiny openings expresses a load bearing function, but the open ground floor and exposed columns, by cutting the wall off from the foundations, makes it clear that the building must be a rigid frame.

The same effect has been obtained on the upper floors, where a long gallery or window cuts across the building, revealing the columns for a floor height. The gallery in a block of maisonettes is sometimes handled in this same way (B).

If the upper floors are designed as a balanced geometric pattern, conflicts may be set up with that of the ground floor. This is generally avoided by stressing the first floor slab: making it, in effect, the plinth of the building. This floor slab may be linked to the end walls, which again may be linked to the roof slab, so that the complete upper structure appears to be contained within a frame of flat slabs. I am not sufficiently a historian to know the antecedents of the *Pavillon Suisse;* but I have always felt that Corbusier hit off in a flash of inspiration an æsthetic expression which might have taken years to develop.

(D) shows a common variation in which there is even greater dissociation between the superstructure and the grid. The façade is freed from the columns by being placed in front of them (its pattern nevertheless reflects the steel grid), and the load bearing function of the columns is dramatised in design. Le Corbusier in his Marseilles scheme used a quite different system for the ground structure.

(E), to bring you back to a previous example, lowers the building quite close to the ground, and although the spatial interpenetration is lost the façade is still cut off from the ground, and the walls tend to float; which gives far more significance to the pattern than when they just run straight into the ground.

(F) shows part of the top floor exposed, as in the case of a board room which opens on to a roof garden. The exposed structural frame gives a sense of enclosure to the roof by throwing an optical barrier round it, and the space is knitted into the regular rhythms of the façade.

Diagonal Façade Patterns

When the framed façade has a pattern based on a rectangular grid, there is generally an even horizontal progression across the façade between the columns, or mullions and an even vertical progression between the windows and panels. If, within the confines of this frame, these two patterns cancel each other out, the total pattern is a balanced one. But in such a balanced pattern the eye also tends to move diagonally across the façade from corner to corner and, speaking very generally, the more the rhythms set up across the façade the more balanced will the pattern be.

You are all acquainted with the South American use of the brise-soleil, and the fascinating and lively patterns that have been made with concrete fins and ceramic tiles. We have no problems of keeping out a blinding sun from office buildings that can not be adequately dealt with by some simple device like a venetian blind. There are, of course, some problems on dazzle, which I have not time to consider, but I would refer you to a most interesting article by Dex Harrison in the August 1950 issue of the ARCHITECTURAL REVIEW.

It would be absurd to try to reproduce the brise-soleil patterns in this country, but nevertheless the basic idea of setting up rhythms by contrasting adjacent units within the façade is being pursued, as in (G). With the office block, the functional requirement of the continuous window restricts alternating contrasts in a horizontal direction. But in a building type that does not need very wide windows and one where room types are repeated (say a block of flats), there are all kinds of possibilities. With a load bearing wall the windows are placed above each other so that the loads are concentrated on to piers between them (H), but if the load is taken by a frame the windows can alternate and solid can be placed over void (J).

Lutyens hit on this simple trick in his Westminster flats (I said Lutyens, not Powell and Moya!), where he alternates sash windows with rendered panels in a chessboard pattern.

Tecton in their Paddington scheme alternate windows grouped with the columns (K), and in some flats under construction in St. Pancras I alternate bedroom and living room windows and set up a minor pattern by small windows set in the brick panels (L). This constitutes a combination of the framed expression with the hole in the wall expression.

By such contrasts of texture and pattern we move away from the purely functional diagrammatic façade to an æsthetic ex-

pression as pictorially interesting as those obtained by dressing up the frame in the trappings of revivalism and far more satisfying because they have been evolved from the expression of construction and the expression of function.

I should have liked to talk on the expression of the environment in which the building stands; of how the expression of function and of construction needs to be used in the interests of the scene as a whole, since architecture is but one aspect of town design. But I have talked too much. And I am afraid what I have said is elementary and will have been very obvious to you. But if only I have made the point that we are now in a period in which the accepted conventions of expression need refining and humanising; that we need to give full significance to the most trivial architectural detail; then I shall go away satisfied.

Such a refining process can only take place on the drawing board—no one else can do it for one.

It can only take place with a divine patience; with a constant sharpening of one's formal experience; with a sense of the presence of the past; and with a conviction of the nobility of the individual.

DISCUSSION

Mr. R. E. Enthoven (Vice-President) [*F*]: If Mr. Gibberd was ever uncertain how to interpret the title of this lecture, I can say without any reservation as Chairman of the Sessional Papers Sub-Committee that he guessed right.

We have had a number of papers lately dealing with the architectural habits of designers who were unable to answer back because they were dead; it seems only fair that this generation in its turn should be analytically examined, and it is timely to do so. In undertaking this task, Mr. Gibberd has earned our gratitude and also our admiration for the way he has dealt with it. He has a large and varied practice, and yet, in spite of all the wear and tear that goes with building these days, he is able to sit back and do some clear thinking on fundamental matters. It was he who after the last war helped to rehabilitate the pitched roof in the eyes of the more advanced architectural critics. Tonight, among many other things, he has cleared the air about clichés.

Mr. Gibberd has shown interesting examples of spatial inter-penetration. I personally like to feel certain whether I am inside or outside my house without having to draw the curtains to find out, particularly in a blizzard. However, there is an opportunity in this country to use this principle in reverse, in the case of shops, to draw the public inside without their quite realising they have left the pavement.

Dealing with framed buildings, Mr. Gibberd has demolished the 'ham sandwich' and also the neo-classic and the neo-classic radiator solutions and brought us up to the balanced pattern of what is something of a crossword puzzle today. The solution corresponds to the demand, made in the name of productivity, to use standard structural members for varying loading to economise in shuttering. This, I am afraid, must blunt the effect of expression of structure. It makes it all the more important to derive all possible benefit from the inter-relationship of buildings on the one hand and the handling of details on the other. Mr. Gibberd, in illustrating this, has suggested that he is dealing only with the elementary and the obvious. Architects spend most of their time worrying about elementary matters, and solutions only appear obvious when they are found.

Mr. Richard Sheppard [*F*]: I am very glad to have this opportunity of seconding the vote of thanks to Mr. Gibberd. I was one of the Committee which asked him to give this paper. We did not do so because he was too old—or too young. We judged that he had reached a kind of architectural puberty and it was therefore proper to allow him to speak. The real reason we did so was that two years ago he gave us another very delightful and thoughtful paper on site planning, and we hoped that he might do the same thing again.

Tonight's lecture, as it has gone on, has got better and better, and that is what Mr. Gibberd himself seems to do. He has been going on some time and we hope that he will go on getting better and better. I read his paper last night and I felt that, towards the end, it was really moving towards a conclusion in architectural expression which would leave behind the consideration of the elements which go to make up the entire pattern. I have the feeling that there is a lot more that Mr. Gibberd could have said and would probably like to have said. I think that we should ask him again in about a couple of years' time to go on with his theme of tonight.

'Expression' in architecture is something that we have rather inclined to leave out up to now, and it is something towards which we are working. 'Expression' it seems to me is the sort of intonation you give to the façade or form of a building. It is the emotion—the feelings which you have about a particular building—which you try to express; and you can express it by proportion as well as by the elements Mr. Gibberd has been considering.

In considering these structural elements we can go a great deal further than has been indicated tonight, and I feel that in Mr. Gibberd's work we are beginning to touch upon some of the formal values which have hitherto been ignored.

Mr. Frank Risdon [*F*]: I do not see why it is not legitimate to sheet a framed building with a veneer of weather-resisting material like brick or stone. I wonder if Mr. Gibberd will enlighten me a little further upon his objection to that?

Mr. Alan Knapton, A.M.P.T.I. [*A*]: One of the pressing problems we have found in the central areas of London is the necessity to get a very high plot ratio. I was struck by the very open plan which Mr. Gibberd suggested was preferable to the kind of thing to which we were accustomed between the wars. I wonder how he felt that the conflicting interests of open planning and of producing a high floor area in relation to site area can be resolved.

My experience is that in the City of London, where plot ratios of 5½ to 1 are not only common but are considered by developers to be essential as a minimum, it is only possible to achieve these plot ratios within the existing code of standards for lighting by raising the heights very much in excess of those permitted under the Building Act. There is one I have in mind which rises to a height of 174 ft. It has not been built yet, but is a serious proposal. That sort of building can only have that open planning which is so desirable by rising to such heights, and this conflicts with the London Building Act.

Mr. Gibberd: Mr. Enthoven said that he did not like inter-penetration. I did not say that I liked it, but you might have a client who wanted a bungalow which had some connection with a garden. All I was trying to illustrate was that when you do it you must consider the expression of the construction and the function of the building and look at the various methods of doing it.

Mr. Sheppard said that I had only just begun to start looking at the problem. I quite agree. It was all very elementary and intentionally so. When you go about looking at new work it is worrying to see suitable things like boot lintels, which are capable of being expressed and can give a definite æsthetic feeling, all being horribly designed; I felt it was time somebody said a few simple things about them. I challenge Mr. Sheppard to give us a lecture next year and take this study of expression a stage further. It wants talking about more.

Mr. Risdon asked what was my objection to sheeting a building. I think this is a good thing in many cases. I omitted a bit of my lecture dealing with this point because time was getting short. It will appear in the JOURNAL report.

Mr. Knapton talked about the difficult problem of plot ratio in the City and asked me if I had any objection to height. Of course I have no objection to height whatsoever. I do not mind how high a building is provided it is related to the total panorama of the setting in which it is. I think Holford prescribed an area round St. Paul's where there is a limitation on building height, but otherwise said he did not mind how high one went outside that area provided one observed the plot ratio and the angle of light. From what I understand about the City plan, the standards that Holford laid down are not being observed. Developers say they cannot make the thing pay on the plot ratio which is laid down. I think one wants to have a go at the developers. I was in the flat 'racket' before the war, and by the time everything was worked out nothing paid unless it was a pretty monstrous conception. But the City is a particular case. The centres of all great metropolises are evil things. The real solution, although it is not much help in this case, is to persuade the developers to go and build in some of the magnificent new towns which are going up now.

R.I.B.A. Prizes and Studentships

AT THE GENERAL MEETING on 8 January the Council's Deed of Award giving the results of the competitions for the Annual Prizes and Studentships awarded by the R.I.B.A. was read. There were in all 504 competitors. The awards are as follows :

The Tite Prize: A Certificate and £100 for the Study of Italian Architecture. The subject was 'A Chapel of Ease for a Roman Catholic Community in Northamptonshire'. Awarded to Mr. Denys Michael McDonnell (Probationer), 1 Scroope Terrace, Cambridge. (Cambridge University School of Architecture.)

The Soane Medallion and £120 for Architectural Study Abroad. The subject was 'A Library and Art Gallery'. Not awarded.

The Pugin Studentship: A Silver Medal and £80 for the Study of Mediæval Architecture of Great Britain and Ireland. Awarded to Mr. Edward Lloyd Hughes [*A*], 26 St. George's Court, Brompton Road, London, S.W.3. (Birmingham School of Architecture.) A Certificate of Honourable Mention was awarded to Mr. Ronald William Brunskill, B.A. (Arch.) (Manchester) [*A*], 1 Hornby Gardens, Prestwich Park South, Prestwich, Lancs. (Manchester University School of Architecture.)

The Owen Jones Studentship: A Certificate and £100 for the Improvement and Cultivation of Knowledge of the Successful Application of Colour as a means of Architectural Expression. Awarded to Mr. David Radford [Student], 74 Westfield Road, Edgbaston, Birmingham, 15. (Birmingham School of Architecture.)

The Grissell Gold Medal and £35: For the Encouragement of the Study of Construction. The subject was 'A Modern Bank Building'. Not Awarded.

The Andrew N. Prentice Bequest: A Certificate and £150 for the Study of Spanish Architecture. Awarded to Mr. Gordon Ellis Michell [*A*], 22 Queensdale Road, London, W.11. (Architectural Association, School of Architecture.)

The Royal Institute Silver Medal and £50 for an Essay. Awarded to Mr. Harold Alan Meek, B.A.(Arch.) (Manchester) [*A*], 6 Carlton Road, Manchester, 16. (Manchester University School of Architecture.) For an Essay entitled 'The Architect and his Profession in Byzantium'. A Certificate of Honourable Mention was awarded to Mr. Edward Higham Jamilly, Dip.Arch. (The Polytechnic) [*A*], 20 Chandos Road, London, N.W.2. (School of Architecture, The Polytechnic, Regent Street, London) for an essay entitled 'The Life and Work of George Basevi, 1794-1845'.

The Banister Fletcher Silver Medal and £26 5s. for the Study of History of Architecture. The subject was 'The Maritime Architecture of the 18th Century'. Awarded to Mr. Jonas Benzion Lehrman (Probationer), 50 Warwick Grove, Upper Clapton, London, E.5. (Department of Architecture, The Northern Polytechnic, London.)

The Alfred Bossom Research Fellowship and £250 for Post-Graduate Research. Awarded to Mr. Thomas Howarth, Ph.D.(Glas.) [*A*], 1 Didsbury Park, Manchester, 20. (Manchester University School of Architecture.)

The Godwin and Wimperis Bursary: A Silver Medal and £245 for the Study of Works of Modern Architecture Abroad. Awarded to Mr. Roderick Nelson Guy [*A*], Greenleaves, Westerham Road, Keston, Kent. (School of Architecture, The Polytechnic, Regent Street, London, and The Royal Academy School of Architecture.)

The Henry Saxon Snell Prize and Theakston Bequest: £125. Offered jointly by the R.I.B.A. and the Architectural Association for the study of the improved design and construction of hospitals, convalescent homes and asylums for the aged and infirm poor. Not awarded.

The Hunt Bursary: £75 for the Encouragement of the Study of Housing and Town Planning. Awarded to Mr. Derek Alfred Walter Lovejoy, M.A.(L.Arch.) (Harvard), S.P.Dip. A.M.T.P.I. [*A*], 44, Kipling Street, London, S.E.1. (School of Architecture, The Polytechnic Regent Street, London.)

The Athens Bursary: £125 for Study at the British School at Athens. Awarded to Mr. David Stuart Paterson, D.A.(Glas.) [*A*], 34 Carmichael Place, Langside, Glasgow, S.2. (Glasgow School of Architecture.)

The Henry L. Florence Bursary: A Certificate and £350 for the Study of Greek, Hellenistic and Byzantine Architecture of the Mediterranean Basin. Awarded to Mr. Charles Iredale Hobbis [*A*], 1 Bell Lane, Fenstanton, Hunts. (School of Architecture, The Polytechnic, Regent Street, London.)

The Ashpitel Prize 1951. Prize of books, value £20, awarded to the candidate who, taking the Final Examination to qualify as an Associate, shall most highly distinguish himself among the candidates in the Final Examinations of the year. Name to be announced later.

The Rome Scholarship in Architecture 1951. £400 per annum for two or three years' study and research at the British School at Rome. Offered by the R.I.B.A. and awarded by the Faculty of Architecture of the British School at Rome. Not awarded.

The R.I.B.A. Silver Medal and £10 in Books for Students of Schools of Architecture recognised for Exemption from the Final Examination 1951. Awarded to Mr. John Smith Bonnington [Student], 25 Briermede Avenue, Low Fell, Gateshead-on-Tyne, 9, Co. Durham. (School of Architecture, King's College, Newcastle-upon-Tyne.)

The R.I.B.A. Bronze Medal and £10 in Books for Students of Schools of Architecture recognised for Exemption from the Intermediate Examination 1951. Awarded to Mr. Douglas Hislop Herd [Probationer], 'Meadowbank', Leslie, Fife. (School of Architecture, Edinburgh College of Art.)

The Archibald Dawnay Scholarships 1951: Three Scholarships of the Value of £60 each for the Advanced Study of Construction. Awarded to: Mr. Iain Ralph Langlands [Student], Glenways, Dale Wood Road, Orpington, Kent. (Department of Architecture, The Northern Polytechnic, London.): Mr. Brynley Gilbert Jones [Student], 14 Redcliffe Road, Mapperley Park, Nottingham. (School of Architecture, Nottingham College of Arts and Crafts.): Mr. Henry Barnett Pont Watson [Student], 57 Cattofield Terrace, Aberdeen. (Robert Gordons Technical College, Grays School of Art, Aberdeen.)

The R.I.B.A. Henry Jarvis Studentship at the School of Architecture, the Architectural Association 1951: £50. Awarded jointly to Mr. George Jolyon Briggs [Student], Harbury Heath, nr. Leamington Spa, Warwickshire, and Mr. Andrew Keith Allen [Student], 1 Rosemont Court, Rosemont Road, London, W.3.

The R.I.B.A. Howard Colls Travelling Studentship at the Architectural Association 1951: £15 15s. Awarded to Mr. Dudley Bernard Duck, 24 Bramcote Avenue, Mitcham, Surrey.

The R.I.B.A. Donaldson Medal at the Bartlett School of Architecture, University of London 1951: Awarded to Mr. Robert James Fisher [Student], 'Ebor', Birdham Road, Chichester, Sussex.

The R.I.B.A. Prize for Art Schools and Technical Institutions with Facilities for the Instruction of Intending Architects (£10 in Books) 1951. Awarded to Mr. Peter Walter Honer [Probationer], 88 The Gallop, Sutton, Surrey. (Kingston School of Art).

The R.I.B.A. Prizes for Public and Secondary Schools. Total value £10 10s. Offered for an essay of not more than 1,000 words or for sketches or scale drawings of a building or part of a building. For competition between boys and girls in Public and Secondary Schools. Awarded as follows: **(a) Essays.** No entries. **(b) Sketches.** (1) £7 7s. to Ian C. Thornton, The Grammar School, Manchester, for his drawing of Baguley Hall, Lancashire. (2) £3 3s. to J. Hendry, The Grammar School, Northampton, for his drawings of Kingsthorpe Church, Northants.

Schinkel

By Dr. Nikolaus Pevsner, M.A., Ph.D., F.S.A.

Read before the Royal Institute of British Architects, 11 December 1951
The President in the Chair

IT IS DOUBTFUL WHETHER the history of architecture can at any period be treated in exclusively national terms. For no period however would such treatment be less possible than for the last two hundred years. From about 1760 onwards, the history of architecture in the West develops as a Franco-Anglo-German alliance—or an Anglo-Franco-German, or a Germano-Anglo-French alliance. Any neglect of this fact would seriously impair the results of national scholarship.

Take just one example. The younger Dance was born in 1741. He was certainly the most interesting architect of that moment in England. But if one wants to understand that particular moment fully, one has to go to France and examine the work of more than half a dozen architects who were all born between 1730 and 1740; men of varying achievements, but all of them revolutionaries of pure form, men who believed in austerity rather than elegance, and in heavyweight rather than in featherweight. They are, Boullée, who was born in 1728; de Wailly and Peyre, born in 1729 and 1739, and who built the Odéon in 1779; Antoine, born 1733, who built the Mint in 1771; Ledoux, born 1736, who built the salt works at Caux from 1773 and the toll gates of Paris from 1785; Gondoin, born in 1737, who built the School of Surgery in 1769-86; Brongniart, born 1739, who built the Capuchin Monastery in Paris in 1783; and Chalgrin, also born in 1739, the architect of the Arc de Triomphe. The whole group all represents one style, which is, broadly speaking, the Dance style.

The inspiration of these men comes from Rome, seen through the eyes of Piranesi; but it also comes from the Palladian-Burlingtonian achievement of England. If the revolution of about 1760-70 was less violent in England, it was due to the existence of this very movement—a movement towards classicism at a time when France and Germany still revelled in a delicious Rococo, sometimes frivolous, but sometimes of inspired frenzy.

If we now go on half a generation, we reach Percier and Fontaine in France, born in 1764 and 1762 respectively, the architects of the First Empire. But to find the man of the greatest genius of the Percier-Fontaine generation one has to go back to England and to Sir John Soane, who was born in 1753. His brilliant development of conceptions which came originally from Dance was brilliantly analysed from this platform last year. However, we can not fully understand Soane without Peyre, Ledoux and Piranesi.

Soane's generation was followed in England by that of Wilkins (born 1778) and Smirke (born 1780)—the generation of Downing College and the British Museum. Wilkins was a Fellow of Caius. Smirke is described by Mr. Summerson in such terms as serious, methodical, solid, competent, dull. Neither of the two allows us to see the best of which that generation was capable; nor was there anybody very important of the same age in France.

To find genius, we have to go to Berlin and look at the drawings of Gilly, born in 1772, who, alas, died of consumption as early as 1800. And to find the highest sense of beauty, and of duty, the most successful attempt at a theory of architecture in neo-classical terms—of Schiller's æsthetic in forms of architecture—and the keenest interest in the Industrial Revolution in terms of the factory and the machine, of cast iron, zinc and papier maché, one must look at the works and read the diaries and letters of Schinkel.

There are two sides to Schinkel's character. On the one hand he was a painter, a stage designer, and a designer of panoramas. On the other he was *Geheimer Oberbaurat* at the age of thirty-four. He was an honorary member of the Academies of Prussia, Denmark, Rome, Bavaria, Russia, Austria and Sweden, and an honorary member of the Institute of France and of the Institute of British Architects—in fact, he was made an honorary member of this Institute as early as 1835, and was one of the very first batch of honorary members of the British Institute.

Karl Friedrich Schinkel was born in 1781.[1] He was the great-great-grandson of a cloth shearer, and a great-grandson, grandson and son of Prussian Lutheran pastors. At his grammar school he recommended himself 'by a staid and modest behaviour' and by 'laudable industry'.[2] He was taught architecture by an able civil servant, David Gilly, who came from a French family which had migrated with the Huguenots to Berlin at the end of the 17th century. But Schinkel owed very much more to the brilliant son of David Gilly, Friedrich Gilly. In a letter to Friedrich Gilly's father, written from Paris in 1804, Schinkel said that 'if anything at all is to develop in me and lead to some progress, I owe these advantages solely to the instructive intercourse I had with him'.[3]

Schinkel went at his own expense to Italy and Paris in 1803, at the age of 22. Gilly and Paris are the chief sources of his style in architecture.

Last year Mr. Summerson, in order to speak of Soane, had to speak a great deal about Dance. I shall have to say something about Gilly and the Paris of 1770-1800 before I can reach Schinkel. As for Paris I have already emphasised that there were at that period more than half a dozen men of importance.[4] Boullée was the earliest and, presumably, the most influential of them, but Ledoux is the most familiar in this country owing to the folio publication he brought out in 1806.[5] Some remarks on three designs by Ledoux may be justifiable to get the right atmosphere for Gilly and consequently, in the end, for Schinkel.

In 1778 Ledoux designed the theatre at Besançon,[6] with a severely antique semicircular auditorium, amphitheatrical seating and a Greek Doric colonnade in front of the top tiers. The Greek Doric style was a recent discovery at that time,[7] and the early use of this severely powerful, overpowering order, so violently opposed to Rococo elegance, is characteristic of Ledoux. Amongst the Barrières de Paris the Barrière des Bonshommes, just south of the Trocadero, by the river, is especially telling. It was designed in 1785. A building like this cannot be properly appreciated without knowing England. The screen of columns with straight entablature in front of an apse is a famous Robert Adam motif, but Ledoux uses it with squat and heavy Greek Doric columns. Also the apse is a complete semicircle in its elevation as against the elegant, shallow arches which Adam preferred. Three or four years after the Barrière des Bonshommes, Ledoux designed a savings bank for Paris. The design consists of three completely separate blocks with very heavy attics and no pediments to the wings. This sense of unmitigated cubes is of importance.

[1] The standard work on Schinkel is still: *Aus Schinkels Nachlass*, edited by A. Freiherr von Wolzogen, 3 voll., 1862-63. A selection from this was edited by H. Mackowsky in 1932. A great many of Schinkel's designs were published in exquisite engravings in *Sammlung Architektonischer Entwürfe*, 1820-40. The best modern biography is by A. Grisebach, 1924. In 1939 the Academy of Architecture at Berlin decided the publication of a *corpus* of the whole *oeuvre* of Schinkel on the lines of the volumes of the Wren Society in this country. Six volumes have so far come out: H. Kania on Schinkel's activity at Potsdam, G. Grundmann on Silesia, P. O. Rave on Berlin (2 vol., not yet complete), J. Sievers on buildings for Prinz Karl, and the same on furniture.

[2] Quoted from Grisebach, p. 9.

[3] Wolzogen I,173.

[4] What we know about them nowadays we owe chiefly to the researches of Dr. Emil Kaufmann, first in Vienna and later in America. *See* particularly: *Von Ledoux bis Le Corbusier*, 1933; and articles in *Zeitschrift für bildende Kunst*, 1929-30, and *Art Bulletin*, 1939 and 1949. On Ledoux also G. Levallet-Haug 1934, on Boullée H. Rosenau THE ARCHITECTURAL REVIEW, 1952.

[5] L'Architecture considerée sous le rapport de l'art, des moeurs et de la législation.

[6] Illustrations of this and the following buildings by Ledoux in M. Raval and J. C. Moreux: *N. Ledoux*, 1945, a book otherwise of little value.

[7] *See* N. Pevsner and S. Lang in THE ARCHITECTURAL REVIEW, 1948.

Little of the Ledoux-Boullée style survives now, but at the time when Gilly went to Paris in 1797 he could see and draw a street with arcades on the most grotesquely heavy, square, tapered pillars, meant no doubt to look Grecian and primeval. It is the Rue des Colonnes, built in 1784 by Legrand and Molinos, both born in 1743, as part of a scheme of urban design, with the Théatre Faydeau as its centre.[8]

So uncompromising and unattractive a style is naturally to be found at its best in fantasies on paper rather than in executed buildings. Take for instance the gaol designed by Ledoux for Aix en Provence, presumably in 1787. It is primarily a study in basic geometry, a cube with heavy pedimented angle projections and low porticoes crowned by colossal segmental pediments. All windows are as inconspicuous as possible. Altogether, usefulness in such designs tended to go by the board. Hence Ledoux's chief work is a series of designs for an ideal town with buildings of this basic geometrical kind. As far as their function goes, they are given such vague names as Temple de Mémoire, Asile de la Félicité, Oikema, or Ecole de Morale. They may well be described as buildings for building's sake. That is characteristic of this moment. In Ledoux architecture becomes absolute in the sense of abandoning its ties with mere use, just as at the same moment art becomes absolute and cuts its ties with the patron (Blake, etc.). As regards style, the Ecole de Morale, for instance, is a combination of cubes and cylinders, with inclined planes, a flat roof and an arched colonnade. In various ways, many features of these designs are curiously 20th century, and that is no doubt what has led to the re-discovery of Ledoux.

Now Friedrich Gilly went to Paris in 1798. However, he must have absorbed this style fully before. How that can have happened, we do not know. Even in the excellent large monograph on Gilly by Alste Oncken published in 1935, there is no answer. It seems most likely that his case is one of independent growth from the same sources which had been available to the French architects: namely, Rome of the 1750s and 1760s, seen through the eyes of Piranesi. Gilly himself never went to Rome, but there were others, such as, for instance, the architect Johann Christian Genelli, who in 1787 sent up to Berlin from Rome a design for a national monument to Frederick the Great in the form of a small Greek Doric temple. Even so it remains mysterious how young Gilly at the age of 22, that is in 1794, can have designed an interior such as Fig. 1 shows, with Doric columns, the semi-circle of the window recess, the emphatically few and low pieces of furniture and—this is Gilly's most personal contribution—that magnificent sense of axes and of the placing of simple forms in space.

In 1797 he also designed a national monument for Frederick the Great—a very much larger scheme which culminates in a Greek Doric temple, the earliest on

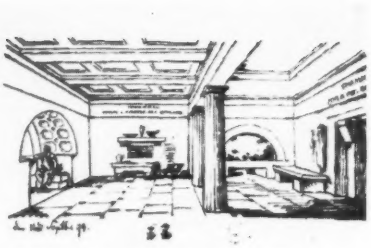


Fig. 1: Friedrich Gilly. Interior, 1794

that scale to be pretty well a replica of a 5th century Greek temple. But more interesting still are the unmitigatedly cubic base on which it is placed and the triumphal arch which leads into the precinct. The triumphal arch is entirely original in shape—an unmoulded, sheer block, pierced by two coffered vaults at right angles. The details may well remind one of contemporary French forms, but, once again, the design was done before Gilly went to Paris.

Then, in 1798, and coming back from Paris where he had studied recent theatres, Gilly designed a national theatre, also only a sketch and never built.[9] It is amazing how here period forms have receded to a minimum. We still find cubes and semi-circles, *à la* Ledoux and a little *à la* English Palladianism, but on the whole the building is, for its date, just as independent of period precedent and as original as anything designed at that time by Soane. You will no doubt remember that Mr. Summerson puts the beginning of Soane's maturity in the year in which he designed the Bank Stock Office, that is 1792.

Gilly's auditorium was to be semi-circular and amphitheatrical, under the influence, no doubt of theatres in France and especially Ledoux's at Besançon.

But to see Gilly's imagination at its most independent and daring one must go to such less explicit designs as that for a mausoleum (Fig. 2). The complete abandonment of mouldings in the piers and lintels gives one an impression vacillating between 20th century and Stonehenge. It must have struck people at Gilly's time as something shockingly elementary, not to say primeval. I think I have proved that, when the Greek Doric style came back during the last third of the 18th century, it also impressed people as something elementary and primeval. That is how Neo-Mediaevalism and Neo-Doricism could be reconciled, and reconciled on a higher plane than simply the plane of English garden furnishings. It is interesting in this connection that Gilly, a few years before (in 1794), went to East Prussia, there to draw for publication the most glorious monument of the Gothic style in East Prussia, the Marienburg.[10] It is a strange accident—though of course no more than an accident—that the Marienburg is one of the very few genuine Gothic buildings on the Continent which depend, as far as one can see, essentially on England. In this the great importance is heralded which English

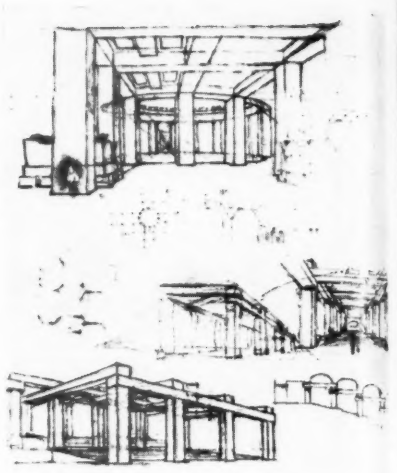


Fig. 2: Friedrich Gilly. A mausoleum

Gothic was to have on the romantic Gothic Revival in Germany. And so, with the romantic Gothic Revival and with Gilly, we can at last move on to Schinkel.

Schinkel's earliest designs—done when he was twenty and twenty-one—are obviously connected with both Gilly and that French style of Ledoux. The basic cubic shapes, the semi-circles, the arcades, the colonnades, can hardly be mistaken.[11] Yet when in 1803 Schinkel went to Italy, he appears from his letters to have been impressed at least as much by the architecture of the Middle Ages as by Rome and the Greek temples of Sicily and Paestum. I have, unfortunately, no time to discuss the journey sufficiently. The diary and letters cover about 180 printed pages. The general tenor of the letters is curiously calm and even. Schinkel uses a great deal such terms as splendid, magnificent, wonderful, excellent, but nowhere does he seem to be really carried away. He speaks with admiration of Siena Cathedral, a building of the 13th century, Milan Cathedral (of the late 14th and 15th centuries) and of the Sicilian 'Saracenic' buildings. But nowhere is he very specific in his predilections. The most interesting of his letters goes to his master, David Gilly.[12] In it, he says, for instance, of the Saracenic style that 'one could make use of it', and of the brick architecture of the 15th century in Ferrara and Bologna, that it contains elements 'applicable by us'. He also speaks in more general terms of the Italian Middle Ages as a style 'too little observed and appreciated'. 'When it comes to antiquity', however, he writes to his master, 'it offers nothing new to an architect, because one is from childhood familiar with it'. And so amongst his drawings we find few of Greek and Roman antiquities, but a view from his window in Rome, drawn with great incisiveness and accuracy of observation, and one of the interior of Milan Cathedral.

[8] Legrand, incidentally, was a pupil and son-in-law of the mysterious Clérisseau, the friend of both Robert Adam and Charles Cameron. Illustration in A. Oncken: *F. Gilly*, 1935, pl. 42.

[9] Illustrated in my *Outline of European Architecture*.

[10] Lithographed by F. Frick and published in 1799.

[11] III. Grisebach, pp. 29 and Oncken pls. 92 and 93.

[12] Wolzogen I, 160, etc.

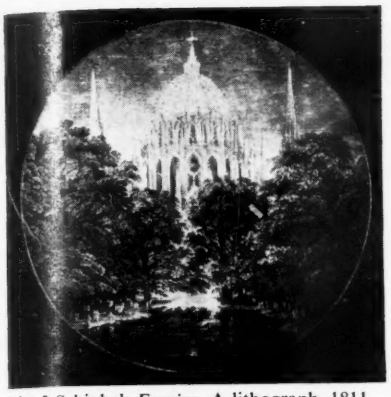


Fig. 3: Schinkel: *Evening*. A lithograph, 1811

rather exaggerated in height, but very delicately observed in the detail.[13]

Schinkel went back via Paris, and on his return to Berlin he found Prussia in the throes of a disastrous depression. 1806 was the year of the Battle of Jena, and the year of the peace which gave to France all Prussia west of the Elbe. There was little work for an architect, and so Schinkel developed into a successful painter. He painted landscapes, and very soon turned to panoramas. Panoramas were, of course, a craze of the moment. Their history is entertaining in itself. It begins with the theatrical designer and painter de Loutherbourg in London, whose Eidophusikon, as he called it, was first shown in 1781 and was a kind of panorama in which were shown such things as the Falls of Niagara and Satan marshalling his Troops by the Fiery Lake. The panorama in its proper sense was invented by a Scotsman, Barker, in 1789. In 1799 he exhibited, for instance, the Battle of the Nile—again a rather sensational subject. In 1800 the first panorama appeared in Berlin, and from 1808 Schinkel did one every year; for instance of the Piazza in Venice, the Grottoes of Sorrento, the Cathedral of Milan by moon and torchlight. Effects of light were always very important for the panoramas, and soon Schinkel went on to the Eruption of Vesuvius. Then came the Gardens of Semiramis, the Egyptian Pyramids and, in 1813, the Fire of Moscow; 1814, the Battle of Leipzig; 1815, the Island of St. Helena. After that economic conditions improved in Prussia, and he did no more. His success as an architect had begun.

Meanwhile, as an example of his art, I illustrate a lithograph called *Evening*, 1811 (Fig. 3), which is, architecturally speaking, interesting for three reasons. First, it is a Gothic building. Secondly, it is a Gothic building in a forest glade, that is a most un-Gothic setting. Thirdly, it is entirely un-Gothic in its design and plan. It has Gothic detail, but it is a central church which one might well classicise with a few strokes of the pen. Also, the glade is cut by a canal, as formal as if it were the canal at Versailles. These classical elements no doubt crept in against Schinkel's intentions. The combination of landscape setting and Gothic architecture touched the romantic vein in Schinkel's heart. Similarly, in an oil painting of 1813, he placed a cathedral in lonely splendour on a rock.[14] Already in Italy or a little later, he had made a large cartoon which is described as 'How Milan Cathedral ought to be placed'.[15] We find that it ought to be placed in complete isolation on a rock by the sea. This, again, is not a Gothic building in a Gothic setting, but a Gothic building in a romantic setting. The combination of architecture and landscape is also one of the most interesting features in Schinkel's theatrical designs. His setting for *Alceste* (1817), for example, showing an altar in front of a dark cave and wild rocks behind, is what a painter like Friedrich did at the same moment in Germany and a parallel to what, at the same time, Turner and Crome sometimes did in England. Equally remarkable are the sets for the Magic Flute (1815), where an Egyptian Temple is placed in a cave under rocks.[16] Neo-Egyptian incidentally was at that particular moment a very recent fashion. It began, as far as I can see, with Napoleon's campaign in Egypt, and Vivant Denon's 'Voyage dans l'Egypte' of 1802; and so from there we reach the Egyptian Hall in Piccadilly, of 1811, by Robinson, and Schinkel in 1815, and the Egyptian façades of Devonport and Penzance.

Schinkel's Panorama of Palermo (1808) was shown to the accompaniment of distinguished singers, a combination of painting and music, in itself very much of the romantic movement. The combined effect caused a sensation in Berlin and was brought to the notice of the King and Queen and shown to the Royal Family; thus it started Schinkel's reputation at Court, and when in 1810 the much-beloved Queen Louise of Prussia died, Schinkel knew that a mausoleum was to be erected and could expound to the King his views in the matter. The design which he submitted (Fig. 4) is a Gothic hall, of the same exaggeratedly soaring proportions which he had given to Milan Cathedral. The piers of the mausoleum are Italian Gothic, too. Schinkel's description is interesting for the sensations which the interior was to stimulate. Piers and vault should create 'the feeling of a lovely grove of palm trees'.[17] The tomb-chest in the middle should be as a couch 'with many sprouting leaves, lilies and roses'; and the light to be let in should be rose-coloured.

Schinkel's memorandum on this mausoleum starts with several paragraphs of architectural philosophy.[18] In a typically German way he is convinced that he must start from scratch. He therefore begins by telling the King that architecture begins with the physical needs. It was only with the Greeks, he says, that we find 'the command of spirit over matter'. The Romans, he went on, although the inventors of vaulting, did not develop this.

Fig. 4: Schinkel: Design for a mausoleum for Queen Louise of Prussia, 1810

They were satisfied with combining their vaults with the opposed principle of Greek architecture. The change came only when the Germans appeared, 'a true Urvolk'. Incidentally, this misconception of the national sources of the Gothic style was, of course, universal. It was French to the French (and rightly so), German to Goethe, and Early English to Rickman. The German mediæval style is, quite clearly, the acme of architecture to the Schinkel of 1810. Only with the Gothic style is 'the spirit wholly in conquest of mass and matter'. Only now the buildings make visible 'what ties us to the superhuman—to God'. There is a later note added to the memorandum which is also in his writing and which confirms that 'the art of the Middle Ages is from the beginning higher in its principle than Antiquity'.

That was in 1810. Nothing came of it. The mausoleum was eventually built in a severe Greek Doric style by Gentz, another interesting architect of Berlin.

When conditions improved in Prussia after the Battle of Waterloo, Schinkel suddenly found himself the most sought after architect of the country, the recognised leader of architecture in Prussia. No sooner had this change in his circumstances taken place than all he designed on a large scale, or nearly all, turned neo-Greek. In less than 10 years now Schinkel designed what has to be regarded as his masterpieces. In 1815 he was made *Geheimer Oberbaurat*, in 1816-18 he built the new Guard House for the Royal Guards in Berlin, in 1818-21 the Theatre, and in 1823-30 the Museum. They are now all severely damaged, but, I gather, not actually destroyed.

In the Guard House (Fig. 5) the connection with the Franco-Gilly background is clear. The building is basically a cube. Again, there are parapets, and the slightly projecting and slightly raised angle blocks, and the severely Greek portico placed in

[13] Ill. Mackowsky, pls. 10 and 15.

[14] Ill. Grisebach, p. 39.
[15] Wolzogen, II, 277.
[16] Ill. Grisebach, pp. 55 and 57.
[17] Wolzogen III, 161.
[18] Wolzogen III, 153 etc.

Schinkel: Above, Fig. 5: Guard House, Berlin, 1816-18. Right, Fig. 6: Theatre, Berlin 1818-21

front. The Guard House is of elementary shape; when it came to a more complicated building, the Schauspielhaus (Fig. 6), the theatre which was finally executed, not to Gilly's designs of 20 years earlier but to Schinkel's, we see a more complex group of forms, arranged symmetrically, on a very successful plan in which the main auditorium is balanced by a concert hall and a foyer. The style is more elegant. The order used is Ionic; pediments are introduced, but the severity which Schinkel had inherited from Gilly is yet there, in what is, perhaps, Schinkel's favourite motif and, as far as I can see, one of the most influential motifs he used. It is the arrangement of bands of very slender, tall windows, separated by completely unmoulded piers or mullions. In the Schauspielhaus the motif appears as one band as well as two superimposed tiers.

The concert hall inside is very much more ornate than anything by Gilly. Gilly would certainly never have used the restless motif of diagonal coffering which Schinkel has chosen for the ceiling of the hall, and if he had, he would have done it differently. Schinkel's other motifs tend to be restless, too. He was keenly interested in the design of any detail of furnishing, as will be seen later, and thus sometimes tends to overdo them. Here lies perhaps a first hint at the coming of a new intricacy.

In my opinion Schinkel's most successful building is the Old Museum in Berlin, designed in 1823 and completed in 1830.[19] Its façade reminds us at once of that of the British Museum, which was done 20 years later. In fact, Smirke in a committee meeting defended himself against the rumour that he had taken this over from Schinkel. The differences are more interesting than the similarities; Smirke's British Museum façade is still essentially a Palladian building in the 18th century tradition, with its recessed centre and projecting wings. Schinkel is entirely uncompromising and gives his building an absolutely straight, smooth, sheer front, with one giant order running right through from the square angle pier on the left to that on the right. There is no pediment whatever, the whole being crowned by the heavy architrave and cornice, and the centre slightly raised, again with a roof appearing to be completely flat.

The building of a public museum as such was very much in the air at that moment. It is very characteristic of the coming of an age of middle-class predominance that now the treasures accumulated by princes were by gradual transference to museums and galleries given over to everybody. Amongst the designs of younger architects, under the influence of Boullée and Ledoux, which were made for various academic purposes, one finds very often designs for museums. There was especially one of the younger members of this group in France called Jean-Nicolas-Louis Durand (1760-1834), who became professor at the Ecole Polytechnique which had been founded in 1804—a characteristic innovation of the 19th century. In the published précis of his lectures (1801-5) one finds a design for a museum, with a long completely flat colonnade in the middle, crowned by a kind of Pantheon dome. This dome rises above a central rotunda, and Schinkel's museum has just such a domed rotunda in the same place.

However, there is again one motif which, I should say, would not have been used twenty years earlier. The staircase to the upper storey, it will be noticed, leads up from the centre behind the colonnade in two arms to the left and right; it is not enclosed by walls, but on both sides open to the colonnade, resulting in an extraordinary—as it is now called—interpenetration of space (Fig. 7). In this relaxing of the severe closure of room against room which had been the rule of Neo-Greek architecture there is in terms of space (as we have seen it, in the concert hall, in terms of ornament) a hint at the more picturesque style of the future.

Having now reached the 1820s, we find that Schinkel was so much the accepted premier architect, and that he was so busy not only in Berlin but in all the provinces belonging to Prussia, in Pomerania, Silesia and everywhere, that it would be impossible for us in the course of an hour to try and look at buildings in detail. Therefore, all that I suggest to do is to pick out a few aspects referring to his later work.

The first of these is his ever-freer treatment of the Neo-Greek. You find this in his vast schemes of 1834 for a palace on the Acropolis (for Prince Otto of Bavaria, the newly elected King of Greece) and for a palace for the Empress of Russia at Orianda, on the Krim, designed in 1838.[20] You also find it, actually executed, though on a much smaller scale, in the various buildings connected with the Villa of Charlottenhof, at Potsdam, in the Royal Park. It can be seen to perfection in the Roman Bath of 1831-33 (Fig. 8). Here is not only a combination of picturesque landscape gardening with classical architecture, but here is picturesque architecture also. The building is no longer severely symmetrical. It is grouped with a little Neo-Greek temple on the left, and leads up to the domestic part of the house with a kind of chalet roof, and then a campanile-like tower with a typically Italian roof. That mixture of classical and Italianate is, for Germany certainly, Schinkel's creation. But I want to mention in parenthesis that the style of landscape gardening at Charlottenhof is English. It became popular in Prussia thanks to the work of Prince Pückler-Muskau, whose park was at Muskau, and, whose book called *Hints on Landscape Gardening* depends entirely on England and Repton. For the building, however, the most interesting architectural question remains for us; how far the many semi-classical and semi-Italian villas in England[21] are connected with Schinkel? That question would certainly deserve some further research.

A very similar problem is set by a drawing for a type of church known amongst Schinkel's works as a Basilica (Fig. 9). The obvious influence of the Early Christian and of the mediæval Italian style on such buildings is what matters. One sees the use of the round arch—in Schinkel's own writing already the term 'Rundbogenstil' comes in, a term used by scholars in America today to denote this

[19] Illustrated in my *Outline of European Architecture*.

[20] Ill. Grisebach, pp. 161-65 and 170-74.

[21] They are familiar from Loudon's *Encyclopaedia* of 1833 (e.g., pp. 854, 857, 950). Early examples actually carried out are, for instance, at Edensor (1838).

Fig. 7: Schinkel: Museum, staircase, Berlin, 1818-21

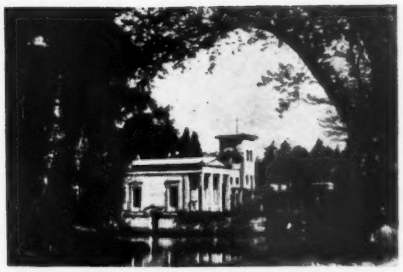


Fig. 8: Schinkel: Roman Bath, Charlottenhof, Potsdam, 1831-33

kind of German work. In the façade, the Italian element is chiefly recognisable in the combination of the round arched windows with the little angle turrets, as you find them in the Romanesque cathedrals of Cremona, Ferrara and so on. Schinkel used these motifs chiefly in the 1830s and 1840s—he died in 1841—and so it is worth remembering that 1842 is the year of Christ Church, Streatham, by Wild; 1844 of the Parish Church at Wilton, by Thomas Henry Wyatt; and 1846 of Vulliamy's All Saints, Ennismore Gardens, Kensington. There was quite a universal craze for using this style in England in the '40s, and again one has to ask about the connection with the work of Schinkel (and his follower Persius).

Having tried to trace a line which leads from Schinkel to England, England can certainly retaliate; for if one forgets about the *Rundbogen* and the Italian turrets, and also incidentally the Doric portico, and looks merely at the bare bones of the Basilica, one is obviously very close to St. George's Chapel at Windsor. Now this building Schinkel knew, because in 1826 he went on a journey through England. He went to make studies for his Museum which was in construction, but he was far more interested in other things, and of these I shall say more later.

In his letters from England he says surprisingly little of the English Middle Ages—but then, he never talked much about his impressions of the past. And that the English version of Gothic interested him can hardly be denied. A proof of this seems to be his designs for a cathedral as a memorial to the Napoleonic War. It was to consist of a big west tower and a nave, widening out into a completely circular chancel, with one central pier and a vault spreading out fan-wise from it[22]. This motif, I need hardly say, is that typical of the English Chapter Houses. But Schinkel's designs were done seven years before his journey to England, and so they may perhaps be English only via the lithographs of Marienburg after Gilly's drawings.

Another doubtful connection with England is to be found at the big hunting lodge for Prince Radzivil, near Ostrovo, in the province of Posen (Fig. 10). The house, called Antonin, has a huge centre chimney in the form of a column surrounded by galleries on two storeys. The appearance is strikingly similar to that of the Ranelagh in London, built in 1741 and pulled down in 1805.[23] But how could Schinkel have known this? Antonin dates from 1822. Could engravings have reached him? Very much less puzzling is a design such as that for Keernick in the Province of Posen. Here, in 1834-35, there is without any doubt an English Perpendicular or rather Neo-Perpendicular ancestry. It is in fact known that his client wanted something English. I know of no immediate parallel, but the building could easily be by any English early 19th century architect.

You know that one characteristic thing about early 19th century architects in England is that they used Perpendicular or Classical forms seemingly at random. There is in the work of Schinkel at least one case which proves that to him also, for certain purposes, the two styles were interchangeable. The case is that of the Wordersche Kirche,[24] in the centre of Berlin, for which he made designs in the Classical as well as the Gothic style. The Classical ones have a series of domes abutted on the left and right by shallow tunnel-vaults, with narrow open galleries set into them on Ionic columns. The source is, I think, the Madeleine in Paris (which was of course not yet completed at the time). The Church was in the end carried out in Gothic with rib-vaulted bays instead of domes, side abutment *à la* Albi and an open gallery with a balustrade decorated by a quatrefoil frieze and resting on Gothic piers and pointed arches. The exterior is severely plain, of brick, with geometrical tracery in the windows, but also no doubt reminiscent of such English buildings as King's College Chapel, Cambridge, the type of the Royal Chapels, with a narrow single nave and angle turrets. The English precedent here may not be very evident, because Schinkel has squared up his design so rigidly. It is this squaring up of all forms which leads me to Schinkel's most original contribution to architecture.

As far as I can see, there is no contemporary parallel in other countries to such buildings as Schinkel's School of Architecture in Berlin, of 1831-35 (Fig. 11). The use of brick and the type of window, with two mullions and little segmental pediments, are clearly a reflection of what Schinkel had seen at Ferrara or Verona, but he has placed these windows in an uncompromisingly maintained grid of uprights and horizontals. The pilasters, if one may call them that, which articulate the elevation, are so elongated that they are really rather like mediæval lesenes. The whole is more akin to Louis Sullivan than to the Italian Renaissance. The *Bauakademie* is an extremely original and, at the same time curiously utilitarian composition for a building which, after all, was to some extent representational.

This is the moment to refer to at least one passage from Schinkel's theory of architecture, into which I can not otherwise

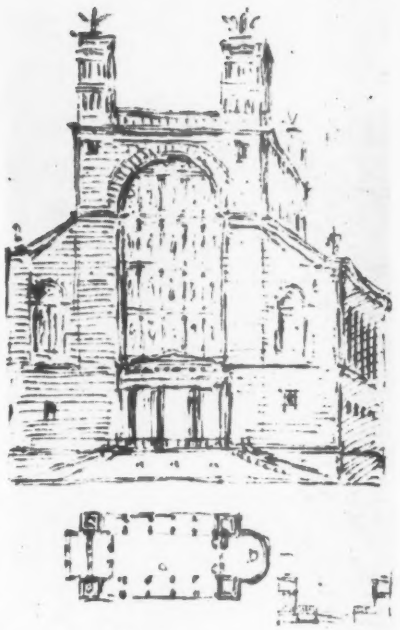


Fig. 9: Schinkel: Basilica, drawing

Fig. 10: Schinkel: Antonin, Ostrovo, interior 1822

[22] Ill. Grisebach, p. 65.

[23] Painting by Canaletto at the National Gallery.

[24] Ill. Grisebach, p. 111, more in F. Stahl; Schinkel, Berlin 1912, pp. 49, 62, 63. L. and D. Joseph: *Gesichte der Baukunst des XIX Jahrhunderts*, p. 19.

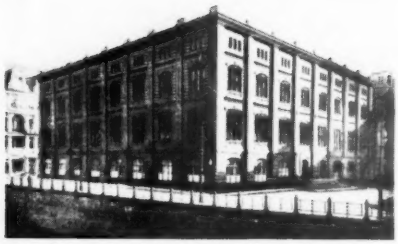


Fig. 11: Schinkel: Bauakademie, Berlin, 1831-35

Fig. 12: Schinkel: design for a Bazaar, 1827

go adequately here. He intended to publish a big theoretical work, and many pages of preparatory notes survive. Here is just one extract: 'Utility is the fundamental principle of all building'—utility of plan, of construction, of decoration. Utility of plan to Schinkel means the highest economy of space, the highest order in the arrangement of space, and the highest convenience in the arrangement of space. Utility of construction calls for the use of the best materials, for the best treatment and assembly of the materials, and for the most clearly visible indication of the best materials and the best treatment of materials. Utility of decoration calls for the best choice of place for decoration, for the best choice of ornaments, and for the best treatment of ornaments.[25]

The School of Architecture is an ideal example of the application of this theory, and in looking at the detail one finds Schinkel's three principles admirably exhibited. The plan is indeed simple and straightforward, the material—local brick—is frankly exhibited, and ornament is well and sparingly used. The decoration of the doorway is incidentally very original, although perhaps vaguely connected with the way in which at Bologna Jacopo della Quercia had arranged his reliefs for the portal of S. Petronio.

The grid system was all that was needed for utilitarian buildings such as the military prison in the Lindenstrasse at Berlin (1825) and the most puzzling of all his designs, the so-called *Kaufhaus* that is a department store, dateable 1827 (Fig. 12). It was meant to be on the Unter den Linden, in the centre of Berlin. It can not very well be a department store, because the history of the department store makes it extremely unlikely that a department store would be designed in Berlin at that time. The growth of the department store seems to begin only in 1844, and properly only under Napoleon III at the Bon Marché in the 1860s.[26] It seems most likely that what Schinkel meant was a kind of bazaar, not a building owned by one man and in which products of all trades were sold; but a building which would house individual firms selling their individual products—as it were, a market hall for selling products of different kinds. Whatever its purpose may have been, it is interesting architecturally as another example of the amazingly progressive or forward-looking style which Schinkel could use when he liked. But he did not always like to use it, and the distinction he makes here in his theory is typical of the whole 19th century. In the notes for his theoretical book Schinkel tells his own experiences. He says that so many people had used period forms in their buildings that he felt repelled by the way in which it was done. So he turned to 'the radical abstraction' of developing buildings entirely out of construction and function. But that results in something 'dry and rigid', as it leaves out two equally important elements: 'the historic and the poetic'. He ends by admitting that to choose rightly amongst these elements remains a matter of feeling and not of reason.[27]

I need not say that here is the complete apology for the 19th century's acceptance of different styles for different buildings: the grid for use, the evocation of Greece for representation. In fact, one might describe Schinkel's theatre as a first synthesis of the grid and the portico. As for the grid and such designs as the *Kaufhaus*, Schinkel had no doubt profited from his visit to England. The *Kaufhaus* was designed in 1827, the English journey took place in 1826.

Time does not allow me to say as much as I should like about this journey, but fortunately Dr. Ettlinger has dealt with it fully in an article in THE ARCHITECTURAL REVIEW some years ago.[28] The fact is that although Schinkel was meant to study museums, he actually looked far more interestedly at commerce and industry than at the fine art of architecture, owing to the fact perhaps that he travelled with P. C. W. Beuth, the head of what was called the Deputation of Trade, that is to say, the Board of Trade, of Prussia. In his very detailed notes Schinkel describes not only what he saw of the British Museum, which was under construction, but bridges, the Thames tunnel—he spoke to Brunel about it—and the docks. He visited breweries, potteries, ironworks, engineering shops, a papier maché factory, spinning mills, and so on; and he was, as an architect, immensely impressed by the gigantic mill landscape of Manchester (Fig. 13). He had never seen anything like that, and indeed could not have seen it anywhere else.[29]

In Prussia certainly there was no such industry. The only comparable enterprise was perhaps the State East Iron Works, in which Schinkel indeed took a very keen interest. Very early—even internationally speaking—the monument on the Kreuzberg in Berlin for the memorial to the Napoleonic Wars (1818-21) was a cast iron structure, 60 ft. high.[30]

After Schinkel had been in England he built two complete iron staircases for the palaces of Prince Karl and Prince Albrecht, and he also designed much on a smaller scale, bridge railings, garden seats, and so on, all done extremely tastefully, with a great deal of understanding for the simplicity and smoothness which is necessary in cast iron. But Schinkel also designed a damask napkin, to be carried out by a weaver, and he designed a great deal of furniture. When he did that, he worked, of course, for craft rather than for industry, that is to say, in the 18th century sense rather than in the 19th century sense, but as I pointed out elsewhere a year or two ago, his attitude was always 19th and not 18th century.[31]

In 1821 the Prussian Board of Trade started a publication, not discontinued until 1837, which was called EXAMPLES FOR MANUFACTURERS AND CRAFTSMEN. In the introduction Schinkel speaks of the necessity of 'adding perfection of form to technical perfection.' His best example, again, is English: Wedgwood. Perfection of form was almost entirely seen in terms of antiquity. But, Schinkel adds, the antique style needs adapting to modern needs, and 'it would be asking too much from the craftsman to leave the adapting to him'. The craftsman must not be 'tempted to design himself', and so the *Oberbaurat*, that is the architect-designer in the 19th and 20th century sense, is doing it for him.

To Schinkel, that was one of his duties. He took altogether a very conscientious and Prussian view of his duties. If the results we have seen are as distinguished as to my mind they are, that is due to a large extent to that particular moment in German history, in which it was Schinkel's good luck to live and work, the moment of Goethe and Schiller, of the Humboldts and Schelling, of Schlegel, Fichte, Hegel and so on. Never at any moment had there been so many men of genius in Germany.

Schinkel was not himself a man of genius. His private life was uneventful. Never, as far as we know, did he make any

[25] Wolzogen, II, 208.
[26] See d'Avenel: *Les Magazins de Nouveautés*, Paris, 1908.
[27] Wolzogen II, 211, etc. and III, 373, etc.
[28] Vol. 97, 1945.
[29] Although he visited factories on the Continent too, potteries such as that of Herr Villeroi at Mettlach on the Saar, and the machine building works of Cockrill at Seraing in Belgium and Aron Manby at Charenton near Paris. Aron Manby moved to Charenton from Tipton near Birmingham.
[30] Ill. Stahl, p. 21.
[31] *Journal of the Royal Society of Arts*, vol. 97, 1948, p. 96.

Fig. 13: The mills of Manchester. Drawing by Schinkel, 1826

efforts to break away from the set and accepted routine of his successfully discharged duties. Successful he was indeed, and deservedly so. And if he was not a man of genius, he was a man of the highest professional achievements, the best architect of his generation in Europe, the best architect, that is to say, of that peculiarly academic moment of restraint and reflection which immediately preceded the onrush of the rich and muddy Victorian torrent.

DISCUSSION

Mr. **Ralph Deakin, O.B.E.** [*Hon. A*]: I count it a privilege to be called upon to propose this vote of thanks to Professor Pevsner for his absorbing and very interesting address. It is with genuine diffidence that I venture to add a few inexpert remarks to that natural expression of gratitude. Apart from his lecture tonight, Professor Pevsner has earned the respect of many students of art and architecture by his books on Continental forms, and he has also written a sequence of volumes on design and building in this country of an originality that we should probably not expect from an English-born English writer.

Professor Pevsner has this evening been dealing with one aspect of German architecture, one period in particular, and one creative artist's classical legacy chiefly in and around Berlin. I am a layman—a child—in these matters, and I must confess that my perambulations about Germany over many years have probably been largely wasted, in a technical sense. At least, I acquired a far-reaching fondness for many rich architectural epochs in a variety of German cities, some now devastated, some under repair, and some extant.

The only thought I had about Schinkel during a long residence in Berlin after the first world war was that anybody who had relieved the general ugliness of the German capital deserved well of his fellow citizens. Everything that Schinkel built in Berlin or in Brandenburg in the years that followed the Napoleonic occupation now stands, if it stands at all, behind the Iron Curtain. Whether Berlin is ever to be rebuilt, nobody knows. Presumably, it will be repaired one day. When that day comes, one can really hope that Schinkel may serve as a model, and not the blue prints of the men who tried to build for the Kaiser or the mad King Ludwig of Bavaria.

Mr. **John Summerson,** B.A. (Arch.) (Lond.), F.S.A. [*A*]: This evening, Dr. Pevsner has got into a lecture lasting one hour a very-many-sided picture of an age in European architecture. In fact, by allusion and indication he has almost covered the whole neo-classical movement since the middle of the 18th century.

I do not suppose that to all of us it has been an altogether easy paper, because there was so much in it. Probably Dr. Pevsner would agree that the reason is that there is no book in the English language on the subject as a whole, and that there are few books dealing with any part of it. And so, when a man of Dr. Pevsner's authority prepares a paper for an audience like this, and prepares it with that conscientious skill which he always uses, he gives us a great deal.

What a pity it is that this period is not better covered in English, because it has a very special and real importance to the modern architect. I am not going to say anything reactionary, but the whole idea of modernity in architecture, it seems to me, is closely bound up with the origins of neo-classicism in the middle of the 18th century. Neo-classicism contains an important archæological factor. It sends the designer back to primitive evidence, and in doing that it removes him from the position he occupied from the Renaissance to the Baroque. It gives him an entirely new viewpoint in his general world outlook. It compels him to say: 'I am now doing my best to be objectively scientifically true to an archæological ideal'; and having said that, he must say to himself: 'Therefore, this architecture which I am building with so much care is not the architecture of my own age but the architecture of another.' Inevitably, the question arises: 'What is the architecture of my own age to be?'

It seems to me that it is at that point in the history of architecture that the concept of modernity becomes inevitable. What is so interesting is that it begins to operate at once. It operated at once with what Dr. Pevsner has this evening called the 'unmitigated cube'. All architects of the past half-century have recognised in the works of Boullée, Ledoux, Gilly, Schinkel and Soane this curious affinity with the modernism for which our own century has sought.

Looking at the whole picture from another angle, it is interesting that as soon as the personal leadership of a few distinguished men in what we know as the 'modern' movement relaxes or is severed, it is to neo-classicism that the architect returns. It was to a kind of neo-classicism that the German architects returned when the modern movement was attacked and suppressed in Germany.

It might almost be said that neo-classicism is still with us. It is in the background. We may not build in it; we may not recognise it; but this long permanent tradition of classicism which Europe has had for two, three, or four thousand years is still there.

How interesting are the international relations of the period! One thing which has always puzzled me is the astonishing similarity of that design of Gilly's for the monument to Frederick the Great with the gateway and other parts of the same building They date from exactly the same year, but there can be no direct connection between them. It is one of those curious and baffling coincidences of history that two designs so astonishingly alike in spirit should occur in the same year.

Paris, of course, is inevitably the centre of the whole movement. It was from the start, and remained so, perhaps more steadily than Dr. Pevsner indicated. After all, when Schinkel was in the middle of his career, a tremendous generation of Frenchmen was born. I wonder whether that special Schinkel theme, the bands of mouldings with plain mullions between, does not come from Debont, a French architect, of whom, I am sure, Dr. Pevsner knows, of around 1800?

Mr. Marcus Whiffen: I must confess that to me, before this evening, Schinkel was principally the architect of a number of designs contained in a book which I rarely felt strong enough to take off the shelf; and so I have learnt a very great deal from Dr. Pevsner's talk.

One aspect which particularly interested me was Dr. Pevsner's suggestion of the connection between English architecture and the architecture of Schinkel and of Germany in general, in particular where it relates to the Italianate revival of the 1830s. Normally, one regards that as having stemmed from certain French books published round about 1810, but on comparing the English designs of people like Godwin and the grander people like Sir Charles Barry, it does not work out that way. I for one would be very interested if Dr. Pevsner could tell us how much those German and Italian designs could have been known through books in this country.

There is another and earlier connection between Schinkel and English architecture which occurred to me. As Dr. Pevsner said, Schinkel travelled in England in 1826 to get material relating to the building of museums, and went to Manchester. There was then a museum building there by the young Charles Barry, the museum of the Royal Manchester Institution. One peculiarity about that building, which I have never seen properly explained, is that it has just the same raised attic storey in the centre, although it is a Greek building, as has Schinkel's Berlin museum, and it looks very much as if either Barry knew Schinkel's design or, indeed, Schinkel may have seen Barry's design. I do not know enough about the precise building history of the Berlin museum to known which it may have been.

Mr. Peter Smithson [*A*]: Dr. Pevsner, in saying the things that influenced the Schinkel school, seemed to think that they derived principally from the engravings of Piranesi. What interests me is where Schinkel got the whole Greek idea from, and the link that he must have had with the earliest archæological explorations that were going on at the end of the 18th century because his particular speciality is that he takes out the elements and then slides each into relation with the others. This method of space control reached its peak in the middle of the fifth century, and we find it in Schinkel and in Ledoux, and today in Mies van der Rohe, who is, of

course, directly influenced by Schinkel. The plans of the Illinois Institute of Technology building are simply the Berlin museum turned on its side and built in steel.

Mr. K. D. Bundy [*A*]: I noticed that when talking of the Doric Order, Dr. Pevsner spoke of its use as being rather symbolic in Schinkel's work. Is there any significance in the use of the Doric Order from that point of view? Secondly, I thought that there was a striking resemblance in the building without any columns and which has simply blank square piers, to the beautiful crematorium by Asplund in Sweden.

Dr. Pevsner: There is very little that remains for me to answer. It seems very flattering that the points raised did not attack more wholesale what had to be an inadequately prepared lecture. There is one place which has all the Schinkel material—the Schinkel Museum in Berlin, housed in the very School of Architecture which has been seen illustrated—but it is on the wrong side of Berlin. I have asked for information, but have not received it, However, I shall ask again.

In Berlin, in 1939, the Academy of Architecture decided to publish the life-work of Schinkel in a number of volumes. Of that, six volumes have come out. Two are now in the R.I.B.A. library; one has arrived recently. The others, as far as I can see, are not represented in this country at all. I have seen them, but only rapidly, and could not go back to them. Three, in fact, were destroyed at various stages of production.

As far as the other points are concerned, what happened about 1760 was very important, but I thought it was bad enough to start at 1770 and spend half my time before I reached Schinkel. I therefore only touched on what ought to be said on the coming of the neo-classical style and on its curious relationships to the 20th century.

After what Mr. Summerson said with regard to the neo-classical element of 20th-century architecture, it was very welcome that from two sides parallels were pointed out with the work of architects who normally are not called neo-classical at all. It seems to me very interesting and gratifying that Philip Johnson's discovery of the Schinkel background of Mies van der Rohe seems so universally accepted. The relations between the coming of the modern movement in Germany before the first world war and the interest in the Prussian style can in fact be proved in many ways.

It is quite right that the Greek Doric of the early 19th century is not 100 per cent correct. But the essential thing is the coming of the baseless column. That was the revolution that struck men like Chambers as so barbaric—a column that rises without any base. The question is no more than that of the use of one motif.

That brings me to the last question I have to cover: the fact that Schinkel himself is by no means a strictly classical planner, and that in some of his later works he is quite ready to go in for that picturesque free planning which goes so well with the mixed classical, mixed Italianate style.

I do not remember exactly whether Schinkel saw the Manchester Museum. I do not think he mentions it, and he mentions pretty well everything he did see. I shall have to look that up. In any case, Schinkel's design for his museum was engraved in 1823, and so that is really the date when his design was ready. Whether Barry saw that engraving, I do not know. It can probably only be found out from evidence in England how far Schinkel, before he was made an honorary member of your Institute in 1835, was accepted as a great architect to whose work the younger would go for inspiration. They could, if they wanted to; for there is that to me, to which Mr. Whiffen referred, the *Sammlung Architektonischer Entwürfe*, which came out in instalments of about six plates at a time and started in 1820.

How far the Italianate picturesque villa of Schinkel can have been known abroad immediately, it is very difficult to say. A facial drawing would not be enough. One should probably look for lithographs, which would represent the picturesque buildings picturesquely rather than for elevations and plans. Meanwhile, the whole origin of the Early Victorian picturesque villa needs a great deal more study. We can, I think, assume that there were more cross-currents than we actually know.

Since this paper was printed Dr. Pevsner has told us that he has received information from Berlin about the state of the Schinkel Museum. The photographs and negatives which it possessed were destroyed during the war and all the original drawings, etc., have been removed by the Russians and their present whereabouts is unknown.

Review of Films—27

The country of origin and date of release are given first. The film is in monochrome unless otherwise stated. The sizes (35 *mm. and* 16 *mm.*) *are given. Sound films are marked 'sd', and silent 'si'. The running time is given in minutes.*
(*F*) *indicates free distribution.*
(*H*) *indicates that a hiring fee is payable.*

Portrait of Salisbury Cathedral

Britain 1950 (*H*)
Summary. A detailed description of the cathedral: views of the precincts and close, the story of its designing and building: the west front and its sculptured figures, the cloisters. Interior views of the cathedral, the Chapter House and Chapels, some of the materials used in building the cathedral.
Appraisal. Described by the sponsors as 'an experiment in transferring the contents of a book of art into a visual medium.' A haphazardly constructed and rather banal film which fails to do justice to an excellent subject. The commentary reveals too low a standard of scholarship and is further spoilt by clichés and meaningless adjectives. The interspersion of music between parts of the commentary is irritating. The photography is not very good.
16 sd. 16 si. 17 mins. Phoenix House Ltd., 38 William IV Street, W.C.2.

Concrete

Britain 1950 (*F*)
Summary. The production and uses of high grade concrete: the necessary properties of concrete, its constitution, and compaction; the selection and proportions of different aggregates for varying purposes, laboratory tests: concrete used for large scale paving contract, accurately controlled mixing inside the drum of a twinbatch mobile paver.
Appraisal. A well constructed film showing clearly how a large scale building project can be organised, using adequate mechanical equipment. The sequences showing the composition and testing of the varying types of concrete are particularly interesting and well thought out: the diagrams are not sufficiently clear but the photography generally is of a high standard. Music is out of place in this type of film. A useful and workmanlike production.
Colour. 16 sd. 25 mins. Sound-Services Ltd., 269 Kingston Road, S.W.19.

The Yorkshire Way

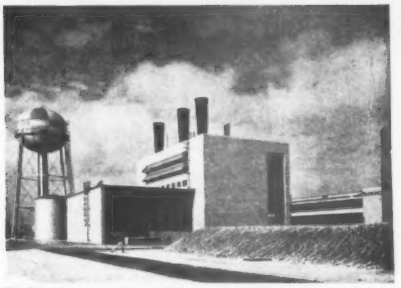
Britain 1951 (*F*)
Summary. Methods of installing various types of 'Yorkshire' copper tubes and the appropriate fittings for the joints. Installation of hot and cold water services and waste systems, the making of joints with different varieties of 'Yorkshire' fittings; 'Yorcolan' copper tubes used for panel and radiant heating of large buildings, gas carcassing of houses, fitting of gas points; laying copper water pipelines underground and connecting to the main; jointing of heating and service pipelines.
Appraisal. An excellent example of how a film, advertising a particular product, can give valuable technical information and, at the same time, be used for instructional purposes. It is well planned and edited, and gives the facts about the product in a clear and concise manner. The photography is of high quality, and the commentary lucid and interesting: the voice of the craftsman adds realism to the film and carries conviction. Useful to architectural and building students.
35 sd. 16 sd. 20 min. The Yorkshire Copper Works, Ltd., Leeds.

The Influence of Design on Building Productivity

By L. W. Elliott, A.M.I.C.E. [*A*]

Read before the Royal Institute of British Architects on 18 December 1951.

Mr. R. E. Enthoven [*F*] Vice-President R.I.B.A. in the Chair



Boiler house, Ford Motor Company, St. Louis, Missouri. A typical example of the industrial architecture of Albert Kahn Associated Architects and Engineers

DURING 1949 representatives of the building industry visited the United States to report on the organisation, constructional techniques and industrial outlook of the building industry there and to draw comparisons between American and British practice. A very fine report was produced and I hope that we have all digested it and applied where possible the recommendations made. I was extremely fortunate in being able to visit the United States recently and was particularly interested in the extent to which the actual design of buildings affected productivity; I felt that however much efficiency one had on the constructional side, the largest single factor contributing to efficiency was design. The average American architect is imbued with the highly competitive spirit of the country, and he knows that he is a member of a team charged with producing an efficient building. His success is not purely mercenary; it consists also of a sense of collaborative achievement—of knowing that everyone is satisfied, including the actual operatives on the job.

Apart from the architect there is another factor influencing productivity in the States, and that is the operative. As one architect put it to me, "Labour is expensive, partly because of high wages and also because it is a variable factor, so that the aim is to use as little as possible and to use it efficiently. It is much more reliable to use a machine, and, if labour is used, to make it as foolproof as possible. The use of bricklayers on straight runs, plasterers on clear areas and carpenters on repetitive work is essential for speed".

Every project I saw was extremely well thought out constructionally, and one was never aware of any complicated detailing which was likely to delay progress. Trades were never intermingled—each man could start on his job knowing that he would have uninterrupted progress, which as we all know is not the case in this country. This principle, however, is the key to speedy building—one cannot hope to organise a building job using differing methods and materials to any great extent, because that does not permit labour or plant to be used efficiently.

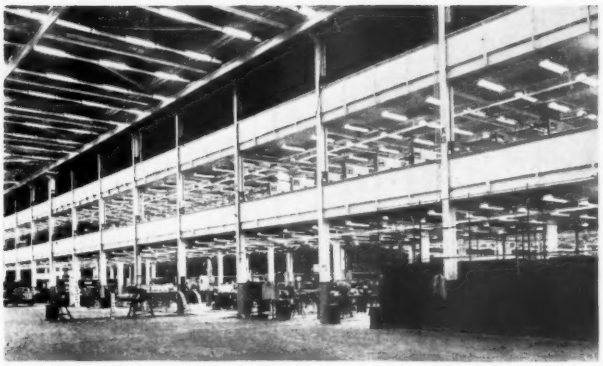
One great advantage in America was that even on the majority of important projects the contractor was consulted at the beginning, and in fact became a member of the team responsible for the execution of the building. I often came across cases where the architects had designed a system of construction which was not in any sense orthodox. In some cases these jobs were sent out to limited tender, and invariably prices were far too high in the architects' estimation. It was only when a contractor was approached directly, and the whole scheme was explained to him and advantages or savings in construction time were argued out, that the job went on at all; and in most cases costs were much lower than when tenders were called for. The majority of jobs where this occurred consisted of those where new systems of cladding, or—for example—the use of welding was called for. In some congested sites such as New York it was absolutely essential that the contractor be appointed at the commencement of the design, because it was due to his foresight and knowledge that the whole sequence of operations was planned so that the minimum obstruction to traffic or the storing of materials on the site was overcome. I am afraid that in this country we are never going to build quickly unless we overcome this problem of joining up with the contractor at the sketch plan stage of the job. It is all very well for an architect to set out an interesting system; it will eventually be described in the bill of quantities in a quantitative way. Such items in a bill of quantities as 'so many yards of concrete floor' or 'so many feet super of brickwork' are not always related to the actual way in which the items are to be built, and the contractor cannot tell very often whether he can use plant or some movable system of formwork.

If it is difficult for contractors to be consulted in this country then we must try to find a way to make them realise how the job can be organised. This might be done by the architect and quantity surveyor in the following way:—

The architect can prepare diagrammatic erection drawings, apart from the normal contract drawings. This has to be done on many occasions, especially where prefabricated or standardised systems of construction are used. This will enable the architect to plan the construction and to see that sections of the work can be carried through without too many trades being dependent on one another. Perhaps these erection drawings ought to be made at sketch plan stage, as this will enable working drawings to be done with the erection problem always in mind. These erection drawings should be sent to the contractor at the tendering stage, together with enough working drawings and a full descriptive specification to enable him to price the job, bearing in mind the methods of erection. Each contractor should then be required to submit with his price a report on the actual way he proposes to carry out the work. This would give the contractor a much greater chance to use his ingenuity and also to plan the operations more precisely.

The quantity surveyor should also be consulted on matters more directly concerned with the economy of building. It is my view that the present bill of quantities should be modified, especially since there is now a greater tendency to use specialist sub-contractors. The actual P.C. and provisional sums now seem to be about half the value of the job and are usually dealt with by the architect, so that the quantity surveyor is only responsible for the work actually carried out by labour on the site and measured in accordance with the standard method of measurement. The contractor merely translates these measurements into costs in a fairly uniform way by an estimator on his staff. This estimator is not directly concerned with possible methods of building but is only familiar with current prices of materials, wages and the contractor's overheads and profit. The American method relies on the contractor taking off his own quantities from drawings and specifications, and has much to commend it, because the contractor's skill, knowledge and organising ability are brought fully into play.

I should not like to see the bill of quantities disappear in this country, but it can be made a more realistic document and the quantity surveyor should be used much more and consulted on methods and costs of carrying out the work. As the vast amount of work today is concentrated in the hands of local authorities and is concerned with housing and schools, it should be possible to appoint contractors for programmes of construction to enable work to be planned over a period of several years and to build up balanced labour teams, provide adequate plant facilities and to progress the supply of materials and components. Much delay is being caused by specialist sub-contractors not having their orders placed until the main contract is signed, and one is constantly seeing a job



Ford Motor Company plant, showing recent trend in America of relying entirely on artificial lighting and ventilation, to save construction costs and avoid the variability of natural lighting. Designers, Albert Kahn Associated Architects and Engineers

Packing room, Colgate-Palmolive-Peet Company, Jeffersonville, Indiana. Welded steel frames, clerestory lighting, and suspended ceiling embodying lighting, air-conditioning, heating, and sprinkler system. Designers, Albert Kahn Associated Architects and Engineers

started and then held up for windows or steelwork.

It is also becoming important to use alternative methods of construction even if the cost appears higher than traditional work, because the longer a job takes the more prices are increased, especially now that the trend is for costs both in labour and material to be constantly rising. Perhaps still greater specialisation is the answer, so that the contractor is left free to progress the job and supervise the sub-contractors. A sub-contractor carrying out excavation work only would have adequate plant and be interested in carrying out this work quickly, as he would not be able to use his men on the work in any other sphere. A firm carrying out reinforced concrete work would be in a better position to obtain uniformity in workmanship and to use the best and most efficient plant and methods, including ready-mixed concrete.

There was an interesting competition held recently in France where the architect was required to select a contractor and to submit a complete scheme for a major project. The price submitted represented the tender price for the winning scheme. This method did encourage the architect and contractor to select the best methods to ensure an efficient job.

Education

In the course of my investigations I examined the educational system of American architects, and visited a wide range of schools and talked with the students and teaching staff. At Harvard great emphasis is placed on the study of what they call humanities allied to the graduate school of design under Walter Gropius. I felt that the system here was much like our Architectural Association School and provided a liberal education. Also, in Cambridge near Boston was the Massachusetts Institute of Technology, where more emphasis was placed on the techniques of building; although since the visit of a well-known contemporary European architect, who exclaimed that he could not teach here because the students did not know of the Parthenon, more cultural studies are undertaken. Basically, however, the student does receive an education which enables him to become well versed in all the technical side of building—structure, heating, ventilating; at the same time a well-known practising architect with contemporary feeling is in charge of the department.

One of the great points of these institutes of technology was the contact and training with other students in departments connected with all branches of building and mechanical engineering. One important feature of this particular school was the holding of what they call 'course conferences' devoted to particular aspects of building. These conferences were continued for perhaps a week, with informal lunches and cocktails, and what distinguished them was that really top people freely gave their time, not in a patronising manner but on an equal footing with the students. A job was there to be done, and everyone got to grips with the problem. Of course, the students did most of the basic research beforehand as part of their studies.

Whilst I was there I attended one of these conferences—it was concerned with the atomic bomb. America at the time was very mindful of this—the Korean War was at its height. The problem, therefore, was 'Supposing an atomic bomb dropped on a major American city, what measures could be taken to evacuate and rehouse the population?" Some of the research undertaken was extremely interesting—one group of students were detailed to devise a list of all articles necessary to carry on their lives for the next five years. These included furniture, motor car, cooking equipment, radio, refrigerator, typewriter and washing facilities, together with books, gramophone records and clothes. They then set about packing these goods in the form of a trailer to be towed by the motor car. Surprisingly enough, the ultimate size of the trailer was only 6 ft. wide, 7 ft. high and 15 ft. long, and the cost averaged out at about £3,000 including the car. Buckminster Fuller, who took part in this conference, had also devised a light-weight space-enclosing structure which looked like a stabilised transparent tent in the shape of a dome, and he demonstrated with models and photographs how it would work. This subject was developed in detail to show how this rehousing unit could be self-sufficient by creating by chemical means its own heating, water supply and sewage disposal.

Contributions to the conference were made by important army officials, industrialists, prefabricators, highway and mechanical engineers, and the whole proceedings were published in the form of a highly technical document. Complete mock-ups and large-scale models were made by the students. This practical side of teaching was extremely helpful, and the architectural students combined with other departments to do this work.

I also visited the Illinois Institute at Chicago, where the architectural department was under Mies van der Rohe. The teaching there however is quite different, with studies much more fundamental. The student is primarily equipped with the tools of his profession—he must be a painstaking draughtsman, he must be able to arrange simple elements in the most pleasing manner, and even after several years of training he only arrives at a stage where he is able to design a simple building before making studies of larger units and their arrangement in a community. This training is highly precise and disciplined, and is based on the theory that if the student can solve basic problems he has a much more firm foundation on which to design and experiment with new ideas.

At the Institute of Design in Chicago the whole system seemed to be reversed, and the student was encouraged from the beginning to experiment with new forms and materials. This school was primarily to create designers rather than constructors, and is a development of the Bauhaus in Germany before the war.

I felt, on the whole, that the training of an architect in America was rather better than in this country. The student seemed from his earliest studies to be taught how to build efficiently. In many cases, courses in structural engineering and construction were taken in those departments by the architectural student, and valuable experience was gained by this. Another strong feature was that case studies were made on

specific subjects, such as the relationship between cost and height, the amounts of steel required for various column grids, and whether columns were used in a high or low building; analysis of horizontal framing, the effect of structure on elevations; the effect on economy of stiff joints or pin joints and costs of various systems were also made and studied. This sort of study is to my mind a basic necessity, but I should think that very few schools can undertake this work; partly because there is no text-book on the subject of the economics of structure, and also because the work involved is enormous. At Harvard this basic research was usually undertaken as a preliminary to the design of a major project, and students worked in teams and collaborated with other departments to gain specialised assistance. The architectural student today has to take into account the impact of industrialisation and explore new relationships dictated by social and scientific progress. The appreciation of methods is more important than accepting ready-made formulae and individual experience will permit an independent conception of basic facts.

Design problems affecting productivity

The shape and size of a building unit has an important bearing on economy—not only on construction costs, but also on the operating and maintenance cost. Generally speaking, the smaller the unit the more costly it is. For example, the detached house is more costly than the terraced house for the same amount of cubic content. In the case of schools, the immediate post-war type consisting of loosely connected classrooms can not be built very easily within the limits of cost allowed; and schools are now being built with the circulation space cut to the minimum within a tight plan.

It is all a question of maximum enclosure for the minimum of external walling. This would normally mean less area available for windows and natural ventilation, but there are many ways by which this problem can be overcome; for instance, by roof lights and mechanical services.

In the United States the impact of mechanical services has had a tremendous effect on planning. Buildings are mechanically equipped to a much higher degree than here, and the proportion of building costs devoted to services is so high that ways have been investigated to see whether savings in the structure can be made. In the case of elevators, complete reliance is placed on them, and only an insignificant fire escape staircase is normally provided in offices and blocks of flats. Such a staircase does not affect the structure in any way as it is not an integral part of the framework but is normally a standard pressed metal self-supporting staircase, passing through a void in the slab.

The high standard of American heating has resulted in savings in planning, especially in the field of housing. The open plan with its saving of corridors, entrance halls and circulation space can only be realised with an even temperature throughout the house or apartment. It saves up to 20 per cent of the plan area. Although by our standards the average American house is small the effect is not noticeable.

The latest office buildings are usually mechanically ventilated, and since the services are so complex and have to be accessible the suspended ceiling is chiefly used. Lighting is usually recessed into this, and with the plumbing, heating and ventilation the thickness between the ceiling and structural floor is used to the full. Much development has taken place on suspended ceilings systems, and most architects considered them a saving factor, especially when one considered the cost of plastering and decorating floor slabs and beams. Apart from the perforated acoustic tile, plaster or asbestos slabs were used, and there were innumerable systems of eggcrate louvres with fluorescent lighting behind them. Most suspended ceilings do not need decoration and were not usually fixed until the last moment, so that adjustments could be made to the services after testing. In fact, in most cases office space was let to tenants completely bare of ceilings or partitions, and they usually employed their own architect to equip the office.

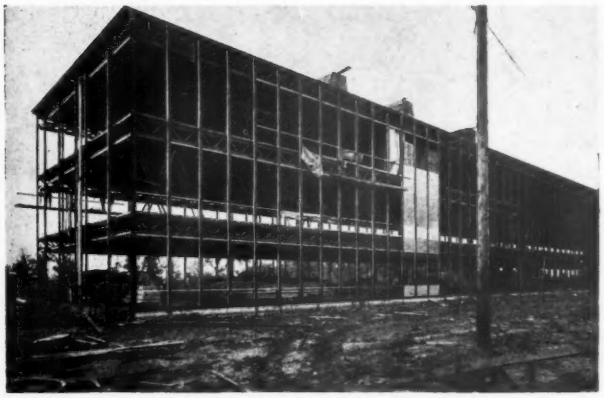
The erection of industrial buildings in America is probably the finest example of collaboration between the specialists. The average American factory is built as part of the tooling of the industry and it is not usually intended that its life should be greater than 20 years, as it is considered that industrial processes will have changed radically by the end of that time. Most industrial buildings are carried out either by firms of engineer-contractors or by a comprehensive professional organisation such as the Albert Kahn office in Detroit. This firm probably carries out the greater part of all industrial building in America. Their office organisation is tremendous and a job is sent through the office in a most comprehensive manner. The work usually starts with the production engineers, who discuss with the user the correct sequence of production. This is then carried on to the stage where the necessary factory lay-out is considered in conjunction with the mechanical engineers responsible for the design of plant and the necessary power. The structural engineers are then called in, and complete designs are made to provide an enclosure for the whole building. Lastly, the architect is asked to design the administration buildings and to advise on the treatment of the industrial buildings generally. The efficiency of American industrial power is the answer to the way these great factories are designed.

There has recently been much development in America to free tall buildings from the restriction of the external frame. The early buildings were designed in the traditional way, so that columns were thickened down the building until they reached the ground. This was satisfactory when the amount of window was controlled to create standard sizes on each floor but meant that although windows on the lower floors practically filled the spaces between the columns, much infilling of brick or stone was needed on the upper floors to create uniformity. This problem was overcome in later years by freeing the external wall from the structure by setting back the face of the columns. This method was carried on for some considerable time until it was realised that the arrangement of furniture or fittings around the window area was difficult, owing to the obstruction of columns.

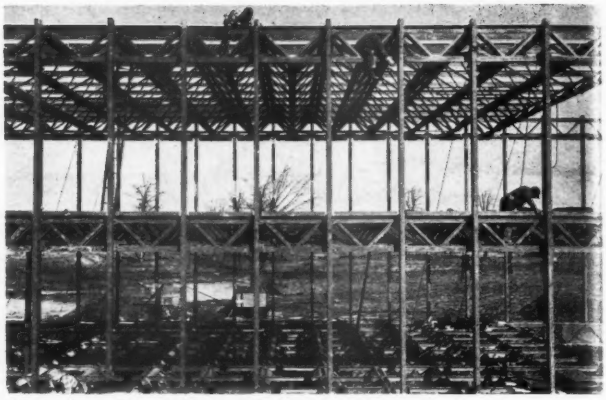
Apartment houses, Chicago. Uniform steel structure and window mullions to permit standard detailing, speeding erection and saving costs. Note the use of movable weather enclosures to ensure progress in bad weather. Architect, Mies van der Rohe

The latest development appears to be to free the outer wall structure entirely from the main structure, so that the building consists of an inner core of structural columns and beams and the external column grid is broken down to provide a structure which will make the external wall self-supporting in a completely standardised way. It is almost like a cage enclosing the structure of the building. This development has meant that standardised spandrils and windows made either in aluminium or stainless steel can be used. They can be made in a factory or otherwise off the site, and use of brickwork or other *in situ* materials is completely avoided. The United Nations building is a very good example of this, and also the latest tall apartment blocks designed by Mies van der Rohe.

As I mentioned earlier, the American architect designs his buildings to use as little site labour as possible. He achieves this not only by using dry methods of construction but also by not caring about the amount of material used in the job. For example, in the case of reinforced concrete, buildings are often erected up to 15 stories in height and not one single variation is made in the column sizes the whole way up the building. In other words, the maximum loads which occur at ground floor level are used to determine the economic section of concrete. This section is then carried the full height of the building and only the reinforcement is varied, although additional variation is provided by adjusting the concrete mixes so as to have a strong mix at the bottom and a weaker mix at the top.



Finishing stages showing the cladding of standard panels incorporating glazing



Close view of the steel space frames

Technical Centre, General Motors Corporation, U.S.A. Standard 50 ft. span steel space frames create a structural floor containing all services. The two illustrations above are of the same building. Architect, Eero Saarinen

Furthermore all beams are standardised from floor to floor in the same way. This seems to me a logical thing to do, as the saving in formwork is enormous. It also enables the shuttering to be made off the site, and since it is completely standardised many uses can be made of it. Once a piece of shuttering is designed for a great number of uses then it is possible to obtain absolutely smooth formwork. This has been exploited to cut down plastering as much as possible, although this development is restricted to a certain extent because of the plasterers' union not allowing walls to be plastered and ceilings unplastered. This restriction has meant that plastering is often avoided completely, although an exception is made to the plastering rule when building working-class blocks of flats.

This waste of actual material, whilst resulting in a saving of time, might not be thought very highly of in this country, where materials are scarce. Labour of course is cheaper here, and the material costs tend to outweigh the cost of labour; but on the other hand we are short of building workers, and really we have the same problem in a different way.

The Americans, of course, do not consider the question of greater amounts of materials being used as important, and this has resulted in much more economic planning and construction. This question of standardising the sizes of members and simplifying the shuttering has led to the widespread adoption of beamless floors, and I saw many buildings where the floor slab, although probably over-thick in some parts, was designed to resist the maximum moments around the column heads. The thickness generally averaged about 10 in. An occasional refinement was the reduction of the weight of this concrete membrane, where bending moments were small, by the insertion of clay tiles, but this does not invalidate the general principle of creating a flush ceiling over the whole of the job. This has meant that the heights of partitions are completely standard and can be determined by the module sizes now prominent in the American building industry.

The savings in labour and construction time are enormous, and I should like to see this principle being applied to more jobs in this country.

Where it was necessary to provide floor beams, these were usually designed as a thickening of various areas of floor. For example, the width of a beam would extend over the whole of a corridor, and from a structural point of view this would appear to be uneconomic, as we are always taught that to create depth in a beam is better than to have width. If the problem is examined further, however, it can be shown that the floor slab spanning between these wide beams is reduced. One American engineer has produced figures to show that there are savings.

In the case of all frame buildings, fixings were either cast into the columns for carrying the external wall or cantilevered beams were provided at the top to enable cradles to be used, and bricklayers worked from these on the exterior of the building. I was never aware of any building being shrouded in steel scaffolding, and I am quite sure that savings in cost were great.

In the case of steel-framed buildings, the same question of using more material and less labour applied. The American steel industry manufactures a far greater range of sections than we have here, and there were many more heavier types of beams, so that at the base of a very high building such as the United Nations building no built-up plated stanchions were seen. At the other end of the scale, for light-weight buildings —such as schools—steel joists were rolled which were deeper but of thinner sections than we are used to here. The beam arrangements of steel frame building were such that many more secondary beams were used, and the spanning of the floor slab between these beams was usually no greater than 8 ft. This smaller span enabled light-weight cinder concrete to be used, lightly reinforced with a steel mesh. This meant that there was much less actual reinforced concrete work being used in a steel-framed building. In many cases, reinforcement was avoided altogether by using corrugated or ribbed steel floor decking, and heating coils

were placed in actual contact to create a large area of radiant surface.

This question of speed has tended to retard the development of new techniques such as welding, shell concrete and prestressed concrete, though I always found architects aware of these new techniques and often they tried to introduce them. Cost, however, was the determining factor, and most of these systems necessitated more labour being used on the site. In the case of one particular job the architect was designing a large dome about 250 ft. in diameter and was hoping to use a thin concrete shell, prestressed at the edges to resist the thrust. The whole job was costed, but it was much cheaper to obtain the same effect as this rather pure form of construction by using a simple system of radial steel beams and covering this structure with a false ceiling. I know the architect was disappointed, but he could not alter the situation; especially since he knew that the building would be erected very quickly with dry methods of construction and the general effect on completion was the same.

There is a growing tendency in America for well-known architectural designers to work in association with other professional firms. In America there are many large offices which are organised to provide comprehensive services, and include on their staff structural, mechanical and sanitary engineers. These firms are extremely efficient, and most of their work is concerned with building large industrial plants and commercial undertakings where architectural design has not been quite so important. When these firms work in association with leading designers they take over completely after the design is produced, and carry through working drawings and advise the contractor. This leaves the designer free to have a smaller office where he can personally supervise all the work, and this has resulted in a relatively few contemporary architects carrying out a lot of work in America and being able to exert a very strong influence.

In conclusion I should like to set out the following points, which should be borne in mind when considering how a building can be designed more economically.

In the first place it is essential that there should be more basic research into the economics of various structural systems and the standardisation of constructional details. This kind of research should be carried out by the architect in association with other professional specialists before any major project is commenced. Planning should take into account the problems of relating space to cost and enclosing the building with as little external walling as possible. Furthermore, there is no doubt that planning should be confined to some regular system, with dimensional standardisation wherever possible, in order to use more standard components; and plans should give clear and simple areas of erected material so as not to have the operative working in a haphazard way. It is essential to segregate varying cubic contents into definite sections of the building so that no effort is wasted by carrying smaller voids above larger voids, and to devise means whereby all external scaffolding is avoided.

Greater attention should be given to the use of mechanical services, which can in certain circumstances reduce planning difficulties and save wasteful areas where normal natural ventilation or lighting is required. All trades should be segregated in such a way that they are able to work independently of one another. This means that architects must see more in terms of how a building is to be erected rather than of assembling differing materials in a traditional way. Buildings must be more streamlined, and consideration be given to using materials, especially those which are plentiful, with regard to ease of construction. Smooth vertical walls and floors without any projections from beams or columns can save costs enormously.

Consideration should be given to the optimum sizes of structural members. Columns, beams and floors should be standardised as much as possible, even though there may be variations of span or loading. There must be more consultation with contractors or constructional men in the early stages, so that means can be found of using plant economically to avoid site labour as much as possible.

Lastly, the architect is the vital factor as far as producing economical buildings is concerned; but he must have greater collaboration with client, specialists and contractor before results can be achieved.

DISCUSSION

Mr. Michael Waterhouse, M.C., Past President: In proposing a vote of thanks to the lecturer, I should like to say that I consider this paper to be a most valuable adjunct—one might almost say appendix—to the report of the Productivity Team. That report had to be of limited length, and I was distressed that we could not include in it nearly so much about design and the influence of design on productivity as we should have liked.

One thing which I appreciate very much in this paper is that Mr. Elliott knows and appreciates the full meaning of the word 'design' as used in the American sense. 'Design' to an American is not just putting his ideas of a building on paper; it is a deliberate and reasoned intention as to every particle of a building, however small, and the accurate timing of all the movements, whether human or mechanical, which are going to combine those particles into the complete job.

Mr. Elliott is quite right in saying that this is arrived at by the collaborative achievement of a complete team. One of the things which impressed me most strongly in America was the marvellous power of highly intelligent collaboration and of co-operation—of the trades on the job.

That intelligent co-operation begins, of course, with the architect and the contractor, but in working on the job every individual of every trade seems not only to be doing his own job but to be doing it in such a way as to help all the other trades which have come before or followed after.

American building operatives have an intense respect for and love of the fact that they are in the best paid industry. If a man is no good, he can get out and do something else. They have also an intense feeling of loyalty and affection for their firm. One operative told me that he was very proud of the fact that he was a supremely good craftsman, and he said: 'I would not work for a dumb firm.'

Then there is another important factor which was expressed to me by one man who said: 'We Americans are the laziest nation on earth. If there is anything we do not want to do ourselves and can not afford to pay anybody else to do, we invent a machine to do it for us.'

That all fits in with their planning system, planning for a free run of the trades. Planning on a building job is directed as far as possible to making the job a production line, as in a factory, but their craftsmanship is good, in the sense that every craft respects its own trade and respects that of the others. You never see anyone knocking anybody else's work about.

Mr. Elliott talked about pre-arrangement with the contractor. It is true that the Americans do much more of that than we do, and it is certainly true that we ought to educate our contractors into a different way of approaching the job. Bills of quantities, admirable though they are in every way, do lead, as Mr. Elliott said, to a quantity-minded approach to the job. We all know the perfunctory visit of the contractor to the architect's office to look at the drawings. The contractor has priced his bills and glanced at the drawings, and that is all he does. We should interest in the drawings any contractor who has tendered and he should be made to go through the drawings with the architect before he starts taking off the prices on the bill.

On the question of standardisation, it is impossible to relate American standardisation to English standardisation. When you have a job which is the size of one of these tall American buildings, the job itself is big enough to make it worth the contractor's while to run a standard for that particular job. That is why it is possible to achieve complete variety in large buildings and yet have the benefits of standardisation, which is something that we can never hope to do in the same way on the same scale in this country.

Finally, Mr. Elliott has emphasised the importance of something which I have been preaching for the last few years, namely, that productivity is nothing less than organisation for the dual aim of speed and efficiency, achieved by the elimination of the haphazard, the undetermined and the unnecessary, whether it is in material or in man-power.

Mr. Lister P. Rees [*A*]: It is generally recognised to-day that productivity is probably the greatest problem which faces the world at the moment, and it is one which will go on increasing in its intensity. I am very glad that the R.I.B.A. has been able to show by this lecture—and will, I hope, show by further activities—that the architect is extremely interested in this

problem and appreciates what an important place he has in promoting productivity in the building industry.

One point mentioned by Mr. Elliott is this question of the architect's place in the building industry and as related to production. I do not know how far we can say that the architect as yet has quite realised his place. We still have designers who are almost nothing but designers. The architect, however, is no longer a designer pure and simple; he is the co-ordinator of a large team of experts.

I am very much interested also in the question of the initial preparation for the carrying out of building projects. We are wedded in this country to the competitive system of tendering, but my personal opinion is that this is out of date, and the sooner we get rid of it the better. We have a long way to go, however, before we can induce contractors to depart from it.

Mr. Guy B. Oddie [*A*]: The American system of planning the job as far as possible in advance is one which has been made possible in America by the very free supply of materials; labour has been the only factor which it has been necessary for them to take into account. The situation here is very different, and is likely to go on being very different. Plans which are conceived a long time ahead of the execution of the work are likely to go awry owing to the materials situation altering as the job goes on. I suggest that one of the ways which we must consider for trying to increase our efficiency is to plan in advance, but to plan only a little in advance; to divide the job into sections and try to reduce the interval between the execution of the drawings and the carrying out of the building work.

The other point which I want to make is that while doubtless we can learn many lessons from America, we can also learn great lessons in efficient production, if not in good architecture, from the practice of the pre-war speculative builder in this country. The influence of design on productivity there provides us with an example which I think merits much greater study than has been given to it so far. As an example of that, we might consider the bow window, which was not only a selling point but also an element in the building which could be left to a late stage to erect; and until it was erected there remained in the shell of the building a very large hole through which materials could be pushed in bulk, rather than having to be negotiated through doors and windows.

Mr. M. Hartland Thomas [*F*]: One point which is mentioned in the report of the Productivity Team is that the profession of quantity surveyor as an independent profession does not exist in America as it does in this country. In considering the American method of tendering we have remarked that the American contractor, who has to take out his own quantities, has a much closer look at the plans than the contractor here.

I think that by analogy, however, we might well consider our own position rather fundamentally. We are urged to make closer contact with contractors in the preparation of designs, and I felt that there was something left in the air when Mr. Waterhouse was speaking and urged us to make the contractor look more carefully at the drawings. I am sure that he did not think that that was enough. I wonder whether the time has not come for us to consider the question of whether we are giving our service to the community in the best way.

If we are going to make an important advance in building economy, I think that we should reconsider our own position fundamentally and see whether we cannot organise ourselves on different lines from the Americans but with a similar aim, and get ahead again as we have been in the past.

Mr. J. A. Spon [*A*]: One thing which comes out of this lecture is that in the U.S.A. it is not so much a question of design affecting productivity as of productivity affecting design, and that in that country, if the ramifications of the Kahn syndicate are any criterion, the architect, if he does not design for productivity, is simply left behind. I hope that in this country we shall not lose sight of that, because I feel that it is possible that we might have a further lecture on the influence of productivity on design, and the architectural results which come out of it.

Mr. John Ratcliff [*A*]: It has been said in the discussion that we are wedded to the tendering system. It seems to me that whilst so much of our present work involves the spending of public money by the Government or by local authorities we are bound to this tendering system, not only because of costs but because it has the appearance of being fair to all concerned; in other words, we advertise for tenders, and if a question is asked in the House there is every appearance of fairness. This is a real difficulty in preventing our getting together with the contractor from the very first stages, and the architect educating himself in an understanding of the economies possible in various different ways of erecting buildings.

I should like to ask Mr. Elliott how the masses of exposed steelwork in America are protected against corrosion and the effects of the weather.

Mr. L. W. Elliott: The steelwork is normally protected by bituminous paints, although exposed steelwork is largely confined to industrial buildings and their life is not generally expected to be greater than 20 years or so, because of ever-changing industrial techniques.

Mr. A. Pott [*A*]: I should like to ask Mr. Elliott to give us some indication of the contractual arrangements under which it is possible in the U.S.A. for the builder to collaborate at the sketch plan stage with the architect. He indicated that there were occasions when the builder and the architect came on the job almost simultaneously. What contract arrangements exist in such cases, and how widely are they used?

Mr. L. W. Elliott: On this question of the architect and the contractor combining, usually the contractor is the client on jobs where there is this collaboration. He then employs sub-contractors to do the work for him. It is largely a question of speculation, the builder buying the land and doing the whole work, and simply employing an architect.

Mr. M. Hartland Thomas: Do we understand that this is a design and price system, such as obtains to some extent in large civil engineering works? The contractor hires an architect to make a design with him, and tenders to the client on a design and price basis, and several others do the same?

Mr. Elliott: That does happen. Very largely, the builder is the actual speculator, the client, and builds large blocks of apartments and sells them afterwards.

Mr. Hartland Thomas: I should like to put it on record that we should be considering the design and price idea ourselves.

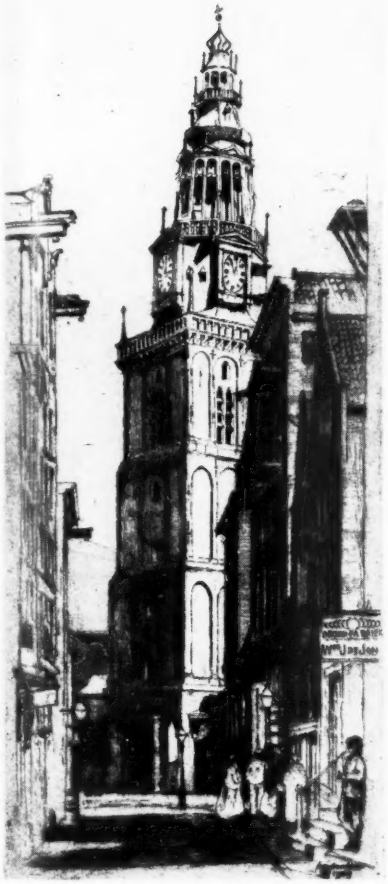
Mr. John Stillman [*A*]: On the question of module sizes in relation to partitions, so that all partitions are standardised just as windows are standardised, what are those sizes, and who fixes them? Secondly, I believe that in America there is nothing quite like our British Standards Institution, or anything corresponding to the Building Research Station.

Mr. L. W. Elliott: The standard dimension is 4 in., but that applies only with brickwork or *in situ* work which is going on. When I referred to module sizes and standard heights of partitions, it must be borne in mind that the jobs are usually on such a scale that the decision can be made for the individual unit.

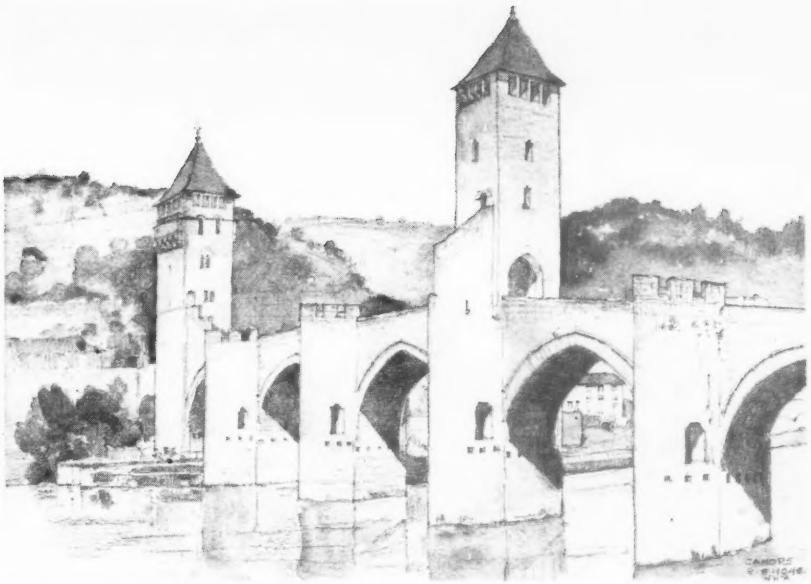
There is a Standards Institution in America which is very good, and of about the same standing as the B.S.I. here. So far as the Building Research Station is concerned, there are numbers of stations in America, but very largely adjuncts to a university or some training school in some particular sphere, or part of an institute of technology, largely financed by industry. There is not the same organisation as we have in the B.R.S. here.

Mr. E. T. Hawkesworth: Mr. Elliott's talk, and his slides, though stimulating, appeared completely to ignore the craft aspect of the industry. There seems to be a complete lack of opportunity for the operative to exercise his own native skill as such, and it would seem that the American method of building and our own are very dissimilar in that respect.

Mr. Elliott: Although the design is extremely straightforward and based on economy, there is an innate craftsmanship in the workers, who take a real pride in their job. Most of the work is of the type which I have shown in the slides, but there are also public buildings and individual jobs where you do find more craftsmanship appearing in them. Those, however, are special cases, and not necessarily designed with a view simply to putting up a building quickly and cheaply. A large number of American buildings, however, are rendered, and there is still a great deal of work for the craftsman there, especially with new light-weight plasters.



Etching: Oude Kerke, Amsterdam

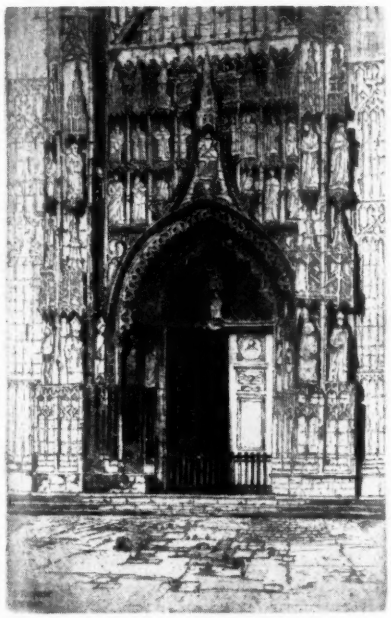


Pencil and wash: Bridge at Cahors

Selections from the Exhibition of Drawings by W. H. Ansell, M.C., Past President

Held at the R.I.B.A. from 15 January to 9 February

Monday to Friday 10 a.m. to 7 p.m., Saturdays 10 a.m. to 5 p.m.



Etching: The west portal, S. Riquier

Pencil and wash: Bridge at Espalion

Superannuation Scheme for Assistants in Private Practice

The Allied Societies' Conference have been considering the possibilities of promoting some form of pension scheme for those members of the profession employed as salaried assistants in private practice in the United Kingdom. After discussion of the subject by the Councils of the various Allied Societies, it has been decided to publish these notes for the information of those Members and Students in private practice who might be concerned in such a scheme, whether as principals or assistants. Those concerned are asked, therefore, to study these notes and to notify the Institute of their willingness or otherwise to participate in a group pension scheme, similar to the one outlined under the heading 'Specimen Group Pension and Life Assurance Scheme', by completing the post-card which accompanies this issue of the JOURNAL and returning it to the Secretary, R.I.B.A.

Requirements

In considering what benefits may reasonably be expected from any superannuation scheme, account should be taken of the retirement pensions and sickness and unemployment benefits that now accrue under the National Insurance Scheme. These, though modest, give a modicum of financial protection; and it is against this background that the requirements of an individual employee, the amount of his contributions and those of his employer towards any superannuation scheme, must be reckoned.

The main requirements of any scheme such as is contemplated by the Allied Societies' Conference are the following:

(i) A retirement pension at the age of 65 for men and 60 for women.

(ii) Interim life insurance cover, which is generally assessed by insurance companies at a capital sum equal to about one year's salary.

(iii) Some degree of transferability whereby an assistant may move from one private office to another and yet remain in the scheme.

(iv) Simplicity in structure and a minimum of administrative machinery so that allowance for flexibility may be made in order to meet conditions in private practice, which vary much more widely than those in public service; and also to obtain the best value from the scheme. Since the administrative machinery for operating the scheme must be paid for out of contributions, the less of it there is the smaller will be the proportion of the contributions unremuneratively absorbed.

Types of Scheme

Requirements (i) and (ii) can be fully satisfied by an arrangement entered into by an individual employer with any assurance company for a pension scheme for his own employees. Such schemes are generally based on contributions from the employee of approximately 5 per cent and from the employer of from 7½ to 12 per cent of the employee's salary. There are at present several private firms operating such schemes, which are really outside the scope of these notes, since they do not provide for transferability but are limited to the individual office. The Institute is not and would not be, therefore, concerned in the administration of these 'individual office' schemes.

The only possible way of ensuring a degree of transferability of superannuation benefits between offices in private practice is by promoting what is generally termed a 'group scheme' which could be made applicable to the entire private practising side of the profession. (A suggestion that transferability should be arranged between public and private offices has been found to be, on investigation, quite unfeasible.) There would be no very great difficulty in launching such a scheme, which would satisfy all the requirements described earlier. From the point of view of the contributors—employers and employees—the scheme would be simple and its operation require a minimum of administrative machinery. From the point of view of the Institute, however, the administration becomes more complex because such a scheme must be promoted and administered by a body of trustees who in theory would act as the 'common employer' of all assistants in the scheme. No insurance company has been found which will undertake the collection of premiums from each individual office participating in the scheme, the maintenance of records and other office work required by the scheme.

The following is a précis of a memorandum prepared by a firm of insurance brokers explaining the steps that have to be taken for promoting a group scheme:

(1) A central representative body of the architectural profession would set up a Trust under Section 32 of the Finance Act, 1921, and the first trustees might be the President, R.I.B.A., for the time being, a partner in a leading firm of architects and one responsible assistant in private practice.

(2) The Trust would deal only with future service pensions.

(3) Each firm entering the scheme would execute a short Deed of Covenant.

(4) Any past service pensions which an employing firm decided to provide would be dealt with by individual annuity bonds in the name of the employing firm and on a basis approvable under the Finance Act 1947, so that in the event of an employee leaving the firm the firm could either hand the bond over or surrender it and retain the surrender value. Past service pensions would have to be paid for entirely by the employers and it is for this reason that they could not conveniently be brought into the Trust scheme.

(5) Each firm joining the scheme would assume future payments for future service pensions for any employee taken into its service from another employing firm which was a member of the scheme.

(6) In the event of an employee leaving the profession entirely or moving to employment outside the coverage of the scheme in such circumstances that the employing firm's contributions were returnable in cash, the Trust would hold the monies to be disposed of at the discretion of the Trustees.

(7) Total premiums would have to be payable yearly in advance by employers and the employees' contributions recovered monthly by the employers.

(8) The Trustees would require a small secretariat for dealing with correspondence, records and accounts, since their function would be to keep a complete set of record cards, deal with the arrangements for all new entrants and all resignations, collect premiums from individual firms and forward in bulk to the insurance company.

(9) Payment of pensions could probably be arranged direct from the insurance companies to the individuals concerned.

(10) The minimum figure suggested for initial entry to make the scheme worth while starting is 1,000 to 1,500.

TABLE SHOWING EMPLOYEES' CONTRIBUTIONS AND PENSION PAYABLE

Annual Salary	Annual Pension payable from normal pension date for each complete year as a contributor in Salary Class	Employee's weekly contribution payable while in Salary Class
	£ s. d.	s. d.
£300—£350	5 0 0	5 0
£350—£400	6 0 0	6 0
£400—£450	7 0 0	7 0
£450—£500	8 0 0	8 0
£500—£550	9 0 0	9 0
£550—£600	10 0 0	10 0
£600—£650	11 0 0	11 0
£650—£700	12 0 0	12 0
£700—£750	13 0 0	13 0
£750—£800	14 0 0	14 0
£800—£900	16 0 0	16 0
£900—£1,000	18 0 0	18 0

Specimen Group Pension and Life Assurance Scheme

The following is a summary of the provisions which are common to most of the group schemes so far studied. It must, however, be understood that the figures quoted for benefits and costs may vary very slightly, since no company will undertake to adhere for longer than three months to the figures they submit for a scheme.

(1) **Benefits.** (*a*) A pension payable in advance and guaranteed for a minimum period from date of pensionable age. This pension is assessed only on service after joining the scheme, but the employer may, by making supplementary premium payments, increase it so as to take account of previous service.

(*b*) A life assurance of approximately one year's salary.

(2) **Eligibility to Participate.** (*a*) Men, full-time employees, over 21 and under 64½, who have completed not less than six months' continuous service.

(*b*) Women, full-time employees, over 21 and under 59½, who have completed not less than six months' continuous service.

NOTE.—Under the existing Finance Acts, employing principals and partners are not eligible.

(3) **Employees' Contributions.** These are assessed according to salary class, and in assessing the pension provided as shown in the table on the opposite page no account is taken of service with any employer before joining the scheme.

(4) **Costs to the Employer.** The employer's contributions are devoted partly to assisting employees' contributions in the provision of a pension and partly to the provision of a life assurance policy of capital value equal to one year's salary. The gross costs to the employer work out at about 11 per cent of the pay-roll; but since, with Inland Revenue approval, the premiums will be admitted as trading expenses, the net cost is about 6 per cent.

(5) **Normal, Early and Late Retirement.** The normal retiring age is 65 for men and 60 for women. By agreement between employer and employee, however, provision may be made for a proportionately smaller pension to be paid on retirement up to ten years earlier than these ages. By agreement, also, the employee may defer his retirement. No further premium payments would then be demanded and life assurance would lapse, but a proportionately increased pension would be payable on ultimate retirement.

(6) **Life Assurance.** In the event of death before retirement age, the life assurance benefit, approximately equal to one year's income plus the total of all the employee's contributions with compound interest, is payable.

(7) **Leaving Service.** (*a*) If an employee leaves the employment of one office in the scheme for that of another also in the scheme, his or her position in the scheme is in no way changed and the new employer assumes the responsibility for payment from the date of the move.

(*b*) If an employee leaves the employment of one office in the scheme for that of another *not* in the scheme he or she may (i) take a refund of his own contributions less deferred income tax, or (ii) take a pension to commence at normal pension age for the amount secured by his contributions up to date. In the event of the employee selecting option (ii), the element of pension purchased by the employer's payments must be credited to the employee, unless he is leaving voluntarily or has been dismissed for misconduct.

In these latter cases the employer may, if he wishes, still give that concession to the employee.

The life assurance premiums have no surrender value.

(8) **Discontinuance of Scheme.** Should the employer discontinue the scheme for any reason (including bankruptcy) each employee would be entitled to the whole of the pension benefits secured by his own and the employer's contributions.

(9) **Payment and Collection of Premiums.** Employers pay premiums to the trustees annually in advance, and recover from employees monthly in arrears.

(10) **Payment of Pensions, Surrendered Contributions, etc.** All such monies are normally paid by the insurance company to the trustees. The trustees may arrange, however, for pension payments to be made direct from the insurance companies to the individuals.

The trustees at their discretion may set off surrendered contributions from individual employers against future payments due from them.

The decision whether the Institute will take further steps to inaugurate a group scheme or do nothing further about it will depend entirely on the response from members. Employers and employees in private practice are therefore urged to complete the post-card enclosed with this JOURNAL and return it as soon as possible to the Secretary, R.I.B.A.

Practice Notes

Edited by Charles Woodward [*A*]

TOWN AND COUNTRY PLANNING ACT, 1947. Central Land Board Announcement, C.L.B./42. The effect of paragraphs 1 and 3 of the Third Schedule of the Act, together with the Exemption Regulations (S.I. 1950, No. 1233) is to provide an exemption from development charge when buildings are rebuilt, enlarged by 10 per cent (or by 7,500 cu. ft. in the case of houses) or enlarged to a similar extent on rebuilding. The Central Land Board will treat as exempt any rebuilding or enlargement within these tolerances provided it takes place within the curtilage as it exists at the time the development takes place.

When the addition of land to the curtilage of a building results in a material change of use of that land, planning permission is required and a liability to development charge arises. Consent value for the purpose of assessing development charge in these circumstances will necessarily be affected by the principles set out above, especially if the curtilage without the additional land is not large enough to allow the carrying out of the full rebuilding and enlargement tolerances thereon.

The Central Land Board will regard the Third Schedule of the Act as permitting a single building, other than a dwelling house, to be rebuilt free of development charge as two or more buildings which together comprise not more than the cubic content of the original building, plus any available enlargement tolerance.

Where such a building, or its foundation site, is sold in two or more parts, the purchaser of any part will therefore have the right (provided it has not already been exercised) to rebuild free of development charge on his land a building not larger in cubic content than that part of the original building which formerly stood upon it, plus any available tolerance. (Press Notice 6 December 1951.)

MINISTRY OF HOUSING AND LOCAL GOVERNMENT. Development of land by Local Authorities. New regulations laid before Parliament by the Minister give local planning authorities a general planning permission when they themselves wish to carry out development of land in their own area. Hitherto they have had to submit a notice of their intention to the Minister. These Regulations have been made on the understanding that planning authorities will bring important and controversial proposals to the Minister's attention. A memorandum and a circular on the subject have been sent to local authorities in England and Wales. Existing arrangements for the grant of planning permission for development by authorities other than the local planning authority of the area concerned and by statutory undertakers have also been revised and simplified. The new procedure is described in the memorandum.

The Minister emphasises that the arrangements are an experiment, the success of which will depend largely on early and informal discussions of proposals and a high degree of co-operation between the parties concerned. The Regulations are 'The Town and Country Planning (Development by Local Planning Authorities) Regulations, 1951', S.I. 1951. No. 2069 (H.M. Stationery Office, price 3*d.*). The Memorandum is entitled 'Development by Local Planning Authorities, Other Local Authorities and Statutory Undertakers'. (H.M. Stationery Office, price 4*d.*)

Timber Licences. Circular 76/51 dated 14 December 1951, addressed to county and local authorities, refers to the simplification of licensing procedure in respect of timber. As from 1 January 1952 the licensing periods will be of six months—January to June, and July to December. Licences for each of the half-yearly periods will be issued to meet a consumer's need during that licensing period; and he will, as now,

be entitled to acquire timber under that licence up to 15 days after the end of the half-year covered by the licence. The special concession announced in Circular 97/50 (dispensing with the need to apply for a fresh licence for timber included in a licence issued during the preceding quarter, but not acquired) will be withdrawn as regards licences issued for 1952 and subsequently. This concession will apply to licences for the acquisition of timber in the present quarterly period ending 31 December 1951 but for no longer.

For the present, existing supplies of Form T.C.3 8/CPL (3rd Revision) suitably amended, will be used until stocks of the revised form are available. Applications for the amended forms should be sent to the appropriate Regional Office of the Department. Any unused stocks of the form, whether 3rd Revision or otherwise, should be returned to that Office.

Construction and Improvement of Private Streets Regulations. Circular 77/51, dated 21 December 1951, addressed to local authorities in England and Wales, refers to Town and Country Planning (Construction and Improvement of Private Streets) Regulations, 1951. S.I. 1951 No. 2224.

The Minister of Housing and Local Government has made these Regulations under Section 48 of the 1947 Town and Country Planning Act, which enables land which is defined in a development plan as land for a proposed road or road widening (including the road it is proposed to widen) to be declared to be a private street after acquisition by the appropriate council. In relation to land thus declared to be a private street the relevant private street works code (the Private Street Works Act 1892, sections 150 and 151 of the Public Health Act 1875, or comparable legislation) is to have effect subject to regulations made under the Act. These Regulations prescribe adaptations and modifications to be made in the relevant private street works code in such cases. The applicable code, modified where necessary, will enable the appropriate council to execute street works and recover expenses from the owners of adjoining lands. The aggregate amount chargeable to adjoining owners is limited to the standard amount (as defined in the Regulations) which could have been charged for street works under bye-law or similar standards.

Any estimate of the total cost of the works must be published under the code and must be accompanied by an estimate of the standard amount or by a certificate that the estimated cost does not exceed it. Where the private street works code specifies the grounds on which objection may be made to the apportionment, or charging of expenses of the street works, the grounds are deemed to include the ground that the sum of the expenses apportioned or charged exceeds the standard amount. Expenses incurred in the construction of sewers can be recovered before the land is declared to be a private street. The street, when made up or widened, becomes a highway repairable by the inhabitants at large, and notice of the fact must be posted.

Expenses of street works are not recoverable in respect of agricultural land or buildings until they cease to be agricultural land or buildings.

Expenses of street works are not recoverable in respect of any land unless and until access is provided for and used by persons or vehicles from that land to the new street.

Expenses of street works in widening an existing road repairable by the inhabitants at large are not recoverable unless and until, after the material date, a building is erected on the land other than an agricultural building, or a building begun before that date, or erected in pursuance of a contract made before that date or erected within the site of a building existing at that date and for a purpose ordinarily incidental to the purpose for which that building is used. The amount recoverable is limited to so much of the apportioned sum as is properly attributable to the land forming the site of the building. The 'material date' and 'site' are defined in the regulations.

The Regulations came into operation on 7 January 1952, and are obtainable at H.M. Stationery Office, price 3*d.* net.

Bulletin of Selected Appeal Decisions. Bulletin No. 10, dated July 1951, has been issued by the Ministry and is obtainable at H.M. Stationery Office, price 6*d.* net.

The Minister decided that the standard condition in the General Development Order 1950, as to not obstructing the view of persons using a road, refers only to the development itself, and the erection of a garage may be permitted development under Class 1 notwithstanding that such obstruction may be caused by the vehicles using the garage. (No. 14.)

The Minister held that where a single private dwelling house became occupied by two families, with separate living accommodation and cooking facilities for the exclusive use of each family and the installation of separate meters and joint use of the entrance hall and bathroom, the building was being used as two separate dwellings within the meaning of Section 12 (3) of the Act, and that there was a material change of use for which planning permission was required. The Minister stated that although physical division into separate units was an important factor, such division was not in his view essential for the purpose of creating separate dwellings within Section 12 (3). (No. 19.)

The Minister held that the use of a lock-up shop in a shopping area as a district office for an insurance company was a material change of use for which planning permission was required. (No. 22.)

IRON AND STEEL DISTRIBUTION. The Minister of Supply has now made the Iron and Steel Distribution Order 1951, S.I. No. 2006, which comes into operation on 4 February next. On and after that date iron and steel of a type or class mentioned in the First Schedule to the Order may not be acquired or disposed of except in accordance with the provisions of the Order. An agreement to acquire or dispose of such iron and steel comes within the terms of the Order.

Acquisition of material is permissible only under an I.S. Indent (defined in the Order) given by the holder of, and in accordance with, an I.S. Authorisation or I.S. Sub-Authorisation, or in the case of small consumers an I.S. Authorisation LSC, and the small consumer may not acquire in any other way the material comprised in his I.S. Authorisation. Non-alloy sheets are acquired under Form M (Sheets) and small quantities of non-alloy steel varying from 5 cwt. to 1 ton and 2 cwt. of alloy iron and steel may be acquired if a certificate is given that such quantities do not bring the person acquiring such iron and steel outside the exemption limits. The form of the certificate is printed in the Order. The Authorisation Departments are given in the Second Schedule to the Order.

Acquisition for the replacement of material which has been acquired and disposed of unused, or 'own recovery' material which has been disposed of, come within the provisions of the Order, except the small quantities exemptions. 'Own recovery' material means material obtained from the destruction, demolition or breaking up of any structure or article.

Treatment, use and consumption require licensing unless the material has already been acquired under some authorisation, when it may be used for the purpose for which it was acquired.

Material from abroad is exempt from the scheme, but once the material is in the United Kingdom its acquisition and disposal and its treatment, use and consumption by anyone other than the direct importer are controlled. Imports may be subject to restrictions under other legislation.

The Order revokes the Control of Iron and Steel Orders Nos. 62, 65, 67, 69, 79 and 80, 1948-51, and the Iron and Steel Utilisation (Records) (No. 2) Order 1950. The Order is obtainable at H.M. Stationery Office, price 6*d.* net.

Steel Distribution Scheme: Small Quantities Exemption. Circular 1/52 issued by the Ministry of Housing and Local Government refers to paragraph 2 of Circular No. 59/51 and brings to the notice of the Authority the following extracts from the Iron and Steel Distribution Order, 1951 (S. I. 1951 No. 2006):

'4. A person who holds an I.S. Authorisation bearing the Authorising Symbol "LSC" shall not acquire or agree to acquire (i)....., or (ii) under Article 5 of this Order, any iron or steel being of a type and class comprised in the I.S. Authorisation LSC which he holds.

'5. Subject to Head (ii) of Article 4 of this Order, any material included in any category in Part I of the Third Schedule to this Order may be acquired for use in the United Kingdom by any person who is able to certify and, by giving to the person disposing of it to him the certificate prescribed in Part II of that Schedule (but not by any other means), does thereby certify, for the purpose of this Order, that

all the material in that category acquired or agreed to be acquired by him under the provisions of this Article in the month of the year in which the material then being certified is delivered to him will not, together with that material then being certified, exceed the quantity specified in Part I of that Schedule against the category of that material: Provided that no such certificate shall be required if the price both to be paid and in fact paid for the material does not exceed Twenty Shillings.

"The prescribed form of certificate for use in connection with the Small Quantities Exemption is given below:

"'**Iron and Steel Distribution Orders SQE.** I do not hold any I.S. Authorization LSC which would cover the following, and acquisition of the following under the Small Quantities Exemptions of the above Orders does not bring me outside the limits of those Exemptions: *Description of Material. . . . Quantity. . . . Dated. . . .* 19. . . . *Name in block letters. . . . Address. . . . Signature. . . . Local Authority. . . .*"'

BUILDING LICENCES. In the JOURNAL for October 1951 a list of works considered not to require a building licence was given, as being the opinion of the Ministry of Works. The Ministry have since given an opinion as to the erection of movable partitions and screens and the necessity to obtain a licence, which is as follows:

'Such work does not need a building licence if the partitions are genuinely temporary and put up with the express purpose of making them readily movable whenever it is necessary to rearrange the space in the building. In such cases the actual fixing would not require a licence either. If, however, the partitions are so constructed as to become an integral part of the building, and the intention is that they should be so, then it is considered that a licence is necessary and that the licence should include the cost of the partitions themselves as well as the cost of fixing'.

CONTRACT SETTLEMENTS. With reference to the Notes from the Minutes of the Council 9 October, published in the JOURNAL November 1951 (p. 27) the following Circular 2/52, addressed to all local authorities, has now been received from the Ministry of Housing and Local Government. 'I am directed by the Minister of Housing and Local Government to refer to the recommendations in the First Report of the Local Government Manpower Committee on the review of contract settlements by the Chief Financial Officer of the local authority. The Committee commended the procedure, understood to be followed already by many local authorities, of giving the Chief Financial Officer an opportunity to review the contract settlements, either before the technical or professional officer had given his certificate or retrospectively.

'The Minister recognizes, as did the Committee, that the decision to adopt this procedure is one solely for the local authorities, having regard to their standing orders or financial regulations. He considers, however, that it may be helpful to them to know the considerations which underlie this recommendation and are relevant to its implementation.

'The Chief Financial Officer's review is intended to deal not with the technical aspects of the contract, but with the accuracy of the accounts. The Minister feels sure that local authorities would agree that the final certificate of the professional or technical officer should not be questioned in respect of any matter placed by the contract within his competence as requiring the exercise of his professional or technical skill and judgment. The object of any such review is to assist the professional and technical officers by using staff, for whom an arithmetical check of accounts is normal routine, to verify the accounts under the contract without any duplication of effort and without in any way detracting from the professional responsibility of the officer giving the certificate. It should be so organised throughout that the aim of saving manpower is achieved.

'The general effect of such a check should be to prevent, or remove at an early stage, the difficulties which often arise on, and delay, contract settlements. The check should not be allowed to delay payments beyond the period named in a contract; if, for the larger authorities, the volume of work involved would cause delay in payment, it is suggested that the review should be made retrospectively. Local authorities will appreciate that delay in making payments increases contractors' overhead costs and any such increase may well be reflected in subsequent tender prices.' (10 January 1952.)

Book Reviews

Mystery and Realities of the Site, by *Richard Neutra.* ob. 8 in. × 10 in. 64 pp. incl. pls. text illus. Scarsdale, New York: Morgan & Morgan. 1951. $3.75.

A recent article by Robin Boyd in the ARCHITECTURAL REVIEW* suggested that modern architects need no longer be accused of treason if they follow the 'emotional impulse of the occasion' and allow themselves to pay equal respect to the two main trends of dogma, and build according to site and mood—perhaps with the poised clarity of a Gropius, perhaps with the land-locked sensuousness of a Wright.

Neutra surely would agree, for this is preaching what he practises. Before the war we remember his works in a functional mood—the early Sun House of 1927 and his experimental school of 1934; now he is becoming known to us also for his organic mood. All his buildings are vigorous, but underlying the dominant characteristics are the signs of other latent moods waiting for time and place to bring them to fruition and dominance. Like a human life, his practice has shown with the passage of years changes of inspiration. New tastes emerge, but do not deny older enthusiasms.

This book was clearly written in an organic mood. It consists of illustrations of his latest houses (mostly already published in this country) linked by the captions to an introductory essay on the mating of a building with its site—a favourite sermon for preachers of this faith. At another time no doubt the functionalist will substitute diagrams for prose and claim these houses, with their radiant heated terraces and aluminium louvres, for himself. The houses are indeed so rich in device, so lavish in their areas of plate glass and so well endowed with expansive landscape, that it needs single-mindedness to see through the haze of luxury to the principles that are valid for us.

NEVILLE CONDER [4]

* 'A New Eclecticism?' in the ARCHITECTURAL REVIEW, Sept. 1951.

Underpinning: Its practice and applications, by *Edmund A. Prentis* and *Lazarus White.* 2nd ed. 9¼ in. xxiv + 374 pp. incl. pls. text illus. New York: Columbia U.P.; Lond.: Oxford U.P. 1950. (Lond. 1951) £3 3*s.*

This book first appeared twenty years ago, and was soon recognised in this country, as well as in America, as an authoritative technical work. The new edition contains a good deal of fresh material, including some interesting notes on the underpinning of the White House, an operation which has just been completed by the authors' firm. There is also a chapter on the raising and moving of structures. A great many excellent illustrations are included.

Classical Indian Sculpture. 300 B.C. to A.D. 500, by *Chintamoni Kar.* viii (incl. map) + 38 pp. + pls. 1950. 6*s.*

Gothic Ivories of the 13th and 14th centuries, by *Joseph Natanson.* 40 pp. + pls. 1951. 7*s.* 6*d.*

English Romanesque Sculpture, 1066-1140, by *George Zarnecki.* 40 pp. + pls. text illus. 1951. 7*s.* 6*d.*

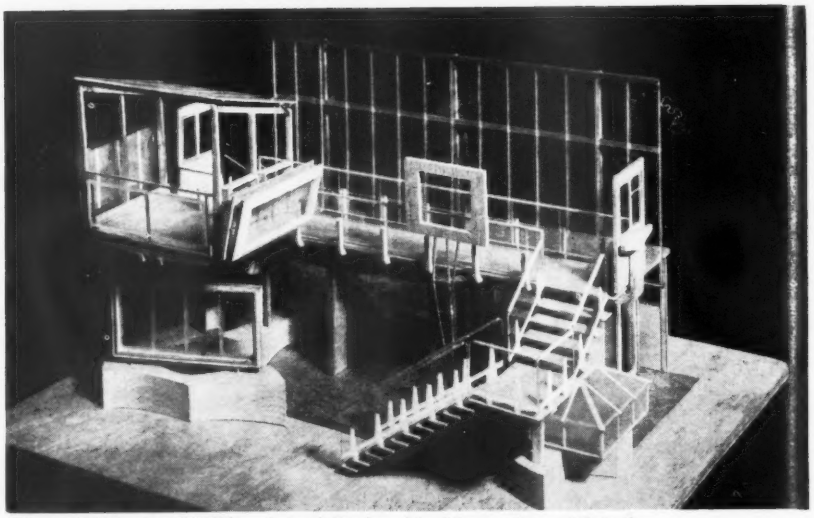
British Furniture To-day, by *Ernö Goldfinger.* 20 pp. + pls. text illus. 1951. 7*s.* 6*d.* (Chapters in art *series.*) 7¼ in. Tiranti.

Here are four more titles in a long and useful series, modest in purpose and price, infinitely varied in subject, remarkably similar in form, and rather uneven in quality. Each volume contains a brief introductory essay and a good collection of illustrations, mainly photographs. All are compiled by recognised experts or at any rate by writers of acceptable attainments. The learned may scoff at these little monographs, but the ordinary reader will welcome them. The fact is they provide concisely-expressed authoritative information on many subjects which it is not easy to find elsewhere. J.C.P.

The Building Exhibition, 1951

At Olympia, 14-28 November

Part II.



Messrs. Williams and Williams' stand. Designed by Messrs. Arcon [*F/A/A*]

Sanitation without drains

A system of sewage disposal that only needs a pipe to carry away the innocuous effluent was shown by the makers, the Mofussil Development Corporation Ltd., Prestwick Airport, Ayrshire. It is called the Destrol (Hygienic) system, and consists in adding an appropriate quantity of a chemical, Destrine, to the water in the pedestal, which is a self-contained unit. By means of the Destrine the sewage is reduced to an odourless, harmless liquid that can be run to a soak-away pit. The wastes are reduced to a final product as harmless as that produced at a sewage works, and it is stated that the system uses less than 5 per cent of the water used in normal urban water flush installations.

There are two models, the Family, which sits on the floor, and the De Luxe, in which the settling tank is placed under the floor; the rest of the appliance being above the floor and looking very like a low-level closet. In this model the sterilised fluid is pumped by an electric motor from the under-floor settling tank to the upper water container. After a certain time, depending on the amount of usage, the contents of the apparatus can be run off to the soak-away by pulling a handle, and this process applies to both models.

Expanded metal

The products of the Expanded Metal Co. Ltd., of Burwood House, Caxton Street, London, S.W.1, are well known, and their flattened Expamet is a development worth attention, as there are some positions where the uneven surface of the usual expanded metal is a disadvantage. The level surface of flattened Expamet makes it particularly suitable for openwork panels, lift shaft surrounds, guards, and balustrading, as the surface is smooth and free from burrs. It can be had in aluminium as well as steel. Available mesh opening sizes range from approximately ¼ in. by 1 in. to 1 in. by 3 in., and the sizes of standard sheets are 8 ft. by 4 ft. or 6 ft. by 3 ft.

Shell beams

A new building unit is the Shell Beam unit, which has been developed from a combination of shell construction and stressed skin techniques. The units are made up of layers of concrete spaced by an insulating core, and are pre-formed in barrel vault shape; their width is 2 ft., and their length 12 ft., a distance they can span without intermediate support. They can be supplied as roof units, with roof covering outside and ceiling board on the inside; or as wall units, with external and internal finishes; or as floor units, ready for floor-laying and ceiling finish.

The advantages claimed are a saving in weight, and absence of need for steel or non-ferrous metals. The small quantity of timber required can be in hardwood, thus avoiding licensing difficulties. The U value is 0·19. The weight of the unit is about 8 lb. per sq. ft. When used as constructional flooring the hollows resulting from the barrel shape permit services to be run. When used as roofing the units can either be laid at the normal pitch, if it is wished to use tiles, or at a pitch of 10 degrees upwards with other forms of covering.

The units are marketed by Messrs. Wm. Logan and Sons Ltd., of 355 Evelyn Street, Deptford, London, S.E.8.

The Crittall Manufacturing Co. Ltd.

The rollers of top-hung sliding doors occasionally jump off their guide; which is a nuisance. Messrs. Crittall have banished that nuisance by one of those small but good improvements that make all the difference. The rollers are now set on the skew and run in the angle of an L-shaped section, so that it is most unlikely that the rollers could over-ride their guide, especially as another angle section, placed above the roller housing, prevents the fitment from jumping up too much. The arrangement is shown in Fig. 1.

Another exhibit was a three-light metal window with 2 ft. wide lights, the overall dimension being 6 ft. 0½ in. instead of 4 ft. 10½ in., and this makes each pane approximately a double square.

Messrs. Crittall's aluminium sun breakers, coupled and swinging on a control pivot, are intended for use abroad where sunglare has to be eliminated.

Thermalite

This is a lightweight structural material developed in the laboratories of Messrs. John Laing and Son Ltd. and marketed by Messrs. Thermalite Ltd., of Shepherds House Lane, Earley, Reading, Berks. The point about the material is that it consists essentially of uniformly-sized air cells that do not intercommunicate, the walls of the cells being formed of a strong and durable siliceous composition. During manufacture the material is rendered chemically and physically stable through being subjected to a process of curing in high-pressure steam. It has good load-bearing and thermal insulation qualities, the U value of an 8-in. cavity wall, with two 3 in. leaves of Thermalite rendered externally and plastered internally, being 0·15, while a 4½-in. brick outer leaf, and 3 in. Thermalite inner leaf plastered, is 0·21. The density is 50 lb. per cu. ft.

The material is made in 18 in. by 9 in. blocks of 3, 4 and 6 in. thickness, and although the cores of the blocks contain air cells they have dense textured external skins that give a good key for rendering or plastering. The blocks can be cut or shaped

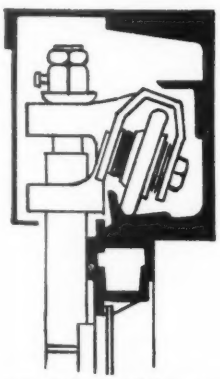


Fig. 1: Messrs. Crittall's sliding door head

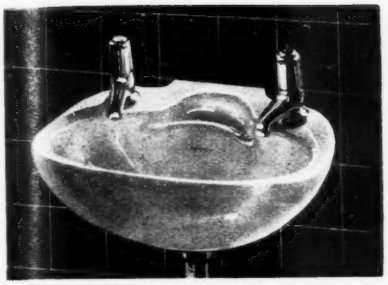


Fig. 2: Messrs. Adamsez, Lotus basin

easily with ordinary tools, and cut nails can be driven into them; furthermore, the makers state that metal fixings will not be corroded by the blocks.

Sanitary Fittings

Three fittings on the stand of Adamsez Ltd. took the eye as possessing even cleaner lines than we have been accustomed to find in modern sanitary appliances. The 'Lotus' basin (Fig. 2) looks as though nothing more than a few deft strokes with a rag would be needed to clean it thoroughly inside and outside; the soap tray also is free from lips and indentations. A water closet without a flushing rim is also a novelty. The underside of the ordinary folded-over flushing rim always becomes foul because it is out of sight and difficult to clean. In the Smada w.c. (Fig. 3) the bowl is washed by high pressure jets which swirl up to the edge; this design has been specially developed for the hospital boards. Finally, there is the 'Lotus' drinking fountain (Fig. 4), which has a downward jet that can not be contaminated.

Nailable Steel Joists

An American idea for driving nails into steel joists was shown on the stand of Messrs. Metal Sections Ltd., of Oldbury, Birmingham. The joist was a channel and near the top and bottom of the flange portion was a slight bulge. Spot-welded to the top and bottom of the flange were similar sections, but hollowed to follow the bulge. The two additions nearly, but not quite, touched the main channel. When a nail is driven into the space between the members it is forced round the bulge and so can not be pulled out, unless a claw-hammer is used. This simple but effective idea is now being made here, under licence from America.

A Double-Glazed Pivot Window

Messrs. Holcon Ltd., of 4 Drapers Gardens, Throgmorton Avenue, London, E.C.2, showed the Carda window, now being manufactured in Great Britain. It is double-glazed and horizontally pivoted, so that the whole window can be rotated in its frame through 180 degrees. The window is in two sections, which can be opened to allow cleaning of the insides of the two panes, and the fit of the two sections is arranged to permit slight ventilation of the inner space, for the purpose of avoiding condensation on

Fig. 3: Messrs. Adamsez, Smada w.c.

the inside of the glass. The pivots run in friction bearings which hold the window firmly in any position up to 30 degrees for normal ventilation. A venetian blind can be fitted between the two sections of the window. The U value of the thermal insulation is given as 0·6, and the sound attenuation as 50 decibels. Double rebates and sealing cords eliminate stray draughts.

The vision area of the window is not interrupted by glazing bars, but it can be made to any size within the following limits: maximum area, 43 sq. ft.; maximum width 8 ft.; maximum height 7 ft. 6 in. Soft or hard wood can be used. Espagnolette bolts, concealed in the casement and operated by a handle, lock it at four points into the top and bottom of the frame, at the same time tightening it against the sealing cords.

Rectangular roof linings

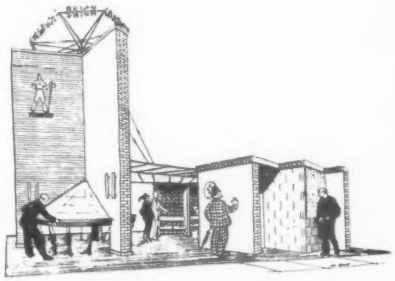
Messrs. T. and W. Ide Ltd. whose showrooms are at 15-16 Rathbone Place, London, W.1, exhibited their mild steel rectangular curb for their glass roof lights. They claim that the risk of the curb being out of square when it takes the glass is minimised, and that the accuracy of the curb top ensures the proper seating of the glass with a minimum of packing. Various sizes are made, ranging from 71 in. by 47 in. to 35 in. by 35 in., these sizes being taken at the base of the curb, which has inclined sides, the top—or sight size—being 5 in. less than the bottom in both directions. The height of the curb is about 16 in., and the top is bent outwards and downwards, to take the domed glass covering; the bottom being bent horizontally outwards to receive plaster. The glass is secured to the curb with asbestos packing and copper clips, which are bolted to prepared slots in the overhang of the curb top. As the glass

Fig. 4: Messrs. Adamsez, Lotus drinking fountain

domes are not unsightly in themselves, there is no need for a lay-light, nor is there any risk of leaking glazing bars. The name 'Twide' has been given to these rectangular glass domes and combined curb and lining. Messrs. Ide also make these curbs and linings with ventilating slots in the sides.

Roof tiling

In the usual form of Roman tiles the tapered shape of the rolls determines the gauge; the Marley Tile Company's Yeoman Roman tile allows a variable gauge because the rolls are not tapered, and thus an increased lap is made possible. Also, there are no mitres at the corners. These advantages should outweigh the disadvantage, if it is one, that to some the parallel rolls may give a slightly heavier look to the roof; but that is a matter of artistic opinion and, possibly, of the position from which the roof is viewed.



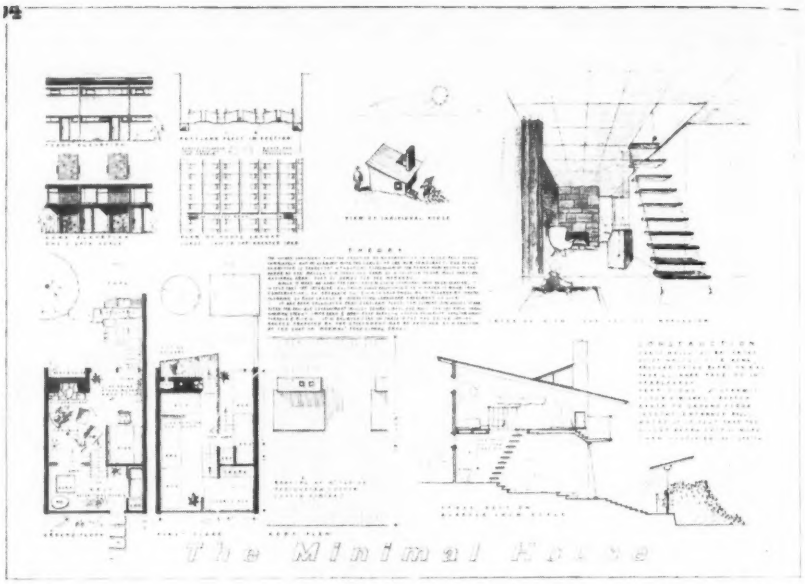
The London Brick Company's stand. Designed by John R. Harris [*A*]

Ideal Boilers and Radiators, Ltd.

We regret that in the notes on the Building Exhibition in the December JOURNAL (p. 65) we referred to the makers of Ideal Boilers as the National Radiator Co. In fact the firm is of course now known as Ideal Boilers and Radiators, Ltd.

(to be continued)

Design placed first: Mr. T. A. Greeves, B.A. (Arch.) (Cantab.) [*A*]



Design placed second: Mr. Peter Taylor, Student R.I.B.A.: The School of Architecture, Leicester

The A.B.S. Competition

We reproduce here the three designs placed first, second and third by the Assessors, Mr. H. S. Goodhart-Rendel, Past President, Mr. John Summerson, F.S.A. [*A*], Mr. Osbert Lancaster [*Hon. A*] and Mr. Rowland Emett, in the most successful competition for a 'Monument to Commemorate the Passing of the Good Old Days of Architecture'. There were fifty-seven entrants for the competition, each of whom paid ten shillings as a 'non-returnable deposit' for a copy of the conditions of competition. The conditions stated that the monument would 'on no account be erected in the middle of Portland Place opposite the offices of the Architects' Registration Council of the United Kingdom'. Other similar liberties were taken with the R.I.B.A. Competition regulations as well as with 'all building acts, bye-laws and regulations likely to restrict the free play of imaginative architectural design'.

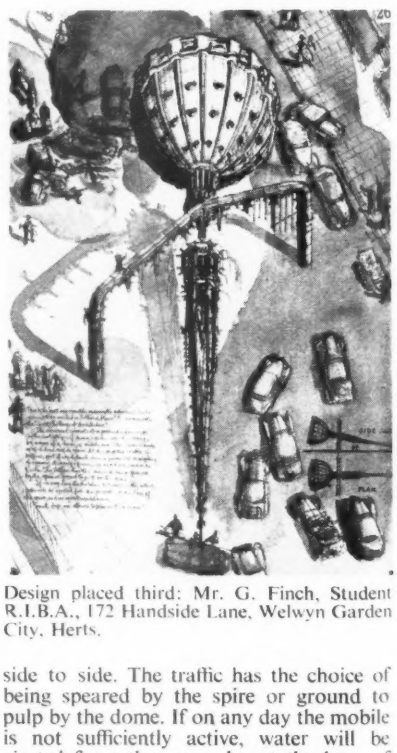
The award of the Assessors was: *First* (Prize of £10), Mr. T. A. Greeves, B.A. (Arch.) (Cantab.) [*A*], 12 Newton Grove, Bedford Park, London, W.4. *Second* (Prize of £5), Mr. Peter Taylor, Student, R.I.B.A., The School of Architecture, Leicester College of Art and Technology. *Third* (Prize of £3 10*s*.), Mr. G. Finch, Student, R.I.B.A., 172 Handside Lane, Welwyn Garden City, Herts. *Fourth* (Prize of £1), Mr. Leslie J. Tucker, Student, R.I.B.A., School of Architecture, Leicester College of Art and Technology. *Fifth* (Prize of £1), Mr. N. H. Musgrave, 9 Trebovir Road, Earls Court, S.W.5. *Sixth* (Prize of £1) Mr. Denis Mason Jones, M.A. (Cantab.) [*A*], Granary House, Linton, nr. Wetherby, Yorks. *Seventh* (Prize of £1), S. Pecksniff, Architect and Land Surveyor, nr. Salisbury, Wiltshire.

The name of the winner of the design placed seventh was obviously a nom-de-plume, so the prize money for this was given to the Centenary Appeal Fund.

The winning design is self-explanatory; its pronounced flavour of Norman Shaw may have some connection with the fact that the winner lives at Bedford Park! A cynic remarked that the winner had merely to sit at his window and sketch.

The winner of the second design states in the text on the drawing that his design is a 'practical expression of the power now vested in the hands of the masses and takes the form of a solution to our most pressing national need—that of homes for the workers'. He admits that 'certain space standards have been reduced', but calculates that Portland Place could support 1,500 of his houses, other possible sites being 'Oxford Circus, the Mall, various Royal Parks, Downing Street, South Bank and many roof areas, e.g. London University, Carlton House Terrace and the R.I.B.A.' Various 'refinements' in the plan are the placing of the sink (with dump of broken crockery) in the back yard, the staircase with strings of piano wire tensioned by the weight of the television set, the bath and w.c. in the front hall, and the use of the Bakerloo tube for sewage disposal.

The text on the design placed third states: 'The monument consists of a Perpendicular arch . . . under which is slung . . . a mobile arm. This arm is made of a dome and a spire. At the slightest rumble of traffic, gust of wind, touch from a passer-by or alighting of sparrows it swings freely, up and down and side to side. The traffic has the choice of being speared by the spire or ground to pulp by the dome. If on any day the mobile is not sufficiently active, water will be ejected from the gargoyles at the base of the spire and so upset the equilibrium. Small boys are allowed to play on the monument.'



Design placed third: Mr. G. Finch, Student R.I.B.A., 172 Handside Lane, Welwyn Garden City, Herts.

Two winners have asked to buy back their drawings with their prize money, and the architectural periodicals are paying reproduction fees for the winning designs. Altogether the competition will raise about £. . . . . enary Appeal Fund.

Notes and Notices

NOTICES

Fourth General Meeting, Tuesday 5 February 1952 at 6 p.m.

The Fourth General Meeting of the Session 1951-52 will be held on Tuesday 5 February 1952 at 6 p.m. for the following purposes :

To read the Minutes of the Third General Meeting held on 8 January 1952.

Mr. Robert H. Matthew, C.B.E. [*A*] to deliver an address to students.

Mr. D. H. McMorran [*F*] to read a criticism of the designs and drawings submitted for the Prizes and Studentships 1952.

The President to present the Medals and Prizes 1952.

(Light refreshments will be provided before the meeting.)

Session 1951-52. Minutes II

At the Second General Meeting of the Session 1951-52, held on Tuesday 11 December 1951 at 6 p.m.

Mr. A. Graham Henderson, A.R.S.A., President, in the Chair.

The meeting was attended by about 320 members and guests.

The Minutes of the Inaugural General Meeting held on Tuesday 6 November 1951, having been published in the JOURNAL, were taken as read, confirmed and signed as correct.

The following members attending for the first time since their election were formally admitted by the President.

AS FELLOWS

Kenneth Anns, C. W. Craske, G. H. Herring, C. W. Neil.

AS ASSOCIATES

F. J. C. Amos, J. H. Beevis, D. C. Begbey, Miss T. M. Bidwell, J. G. Bramley, B. J. Burns, T. W. O. Carter, R. S. Chesher, A. J. Connidis, Miss B. R. Cook, J. W. Cooper, P. A. Dixon, H. R. Dubash, W. R. Duck, P. W. C. Forrest, L. W. Francis, J. S. W. Fuller, R. A. Greaves, Edward Hickmore, F. A. Hobart, A. F. Hobbs, C. R. Hopkins, David Hunt, I. R. Hunt, D. A. Hyde, D. W. Insall, F. C. Jepson, R. J. Juster, P. E. Locke, R. M. McCarthy, H. J. M. McMaster, G. D. Malin, M. E. Pache, Roy Partridge, A. J. B. Pilcher, D. H. Pooley, A. J. Pullen, R. A. Ridgwell, E. T. Roberts, P. S. Russell, L. J. A. Stafford, Miss E. B. J. Thomas, A. E. Thompson, H. R. Wade, R. O. G. Williams, Miss V. M. Turner.

AS LICENTIATE

H. P. Sanders.

Dr. Nikolaus Pevsner, M.A., Ph.D., F.S.A. having read a paper on 'Schinkel', a discussion ensued, and on the motion of Mr. Ralph Deakin, O.B.E. [*Hon. A*], seconded by Mr. John Summerson, B.A. (Arch.) (Lond.), F.S.A. [*A*], a vote of thanks was passed to Dr. Pevsner by acclamation, and was briefly responded to.

The proceedings closed at 7.55 p.m.

Session 1951-1952, Minutes III

At the Third General Meeting of the Session 1951-1952 held on Tuesday 8 January 1952 at 6 p.m.

Mr. A. Graham Henderson, A.R.S.A., President, in the Chair.

The meeting was attended by about 550 Members and Guests.

The Minutes of the Second General Meeting held on 11 December 1951 were taken as read, confirmed and signed as correct. The following members attending for the first time since their election were formally admitted by the President:

AS FELLOWS

A. G. Nisbet, H. F. Robinson, M. J. F. Secrett.

AS ASSOCIATES

G. J. Allen, L. G. Armstrong, A. G. Arnold, Miss Marjorie J. Atkinson, S. H. Ball, M. G. Ballard, J. L. Barnard, I. W. Beese, P. G. Beresford, D. A. Birchett, A. P. Cooksey, D. G. M. Chalmers, L. L. Clarke, A. Clayton, A. S. Craig, G. E. Crane, M. R. Dabner, C. S. Derwent, S. B. Downs, Mrs. Lydia Dransfield, W. H. C. Duncan, M. J. C. Edwards, W. L. Fenner, Dr. C. P. Franck, A. C. Frankum, A. J. Gasson, R. W. George, A. R. Goodrich, N. W. Haile, P. Hamill, S. J. Harris, G. A. Hawkins, D. J. Hogarth, J. A. Hogger, H. J. Hussey, J. Lambert, A. T. Malloch, N. C. Millin, L. H. Nixon, F. G. F. Nutter, Mrs. Mary Oates, J. S. Pantlin, V. S. Paton, D. L. Robinson, L. A. Roche, P. H. Rose, D. R. F. Row, R. D. Salmon, L. S. B. Scales, J. H. Seale, J. S. Smith, Miss Pamela G. Smith, Miss Sheila M. Staley, J. Stedman, A. T. J. Stokes, G. D. Sykes, L. E. Tatum, G. H. Uffindell, J. M. Wood, R. J. Wood, D. C. Wright, V. D. Wynyard.

AS LICENTIATES

A. S. Cripps, J. C. Myers.

The Secretary read the Deed of Award of Prizes and Studentships made by the Council under the Common Seal.

Mr. Frederick Gibberd, M.T.P.I. [*F*] having read a Paper on 'Expression in Modern Architecture' a discussion ensued and, on the motion of Mr. R. E. Enthoven (Vice-President), seconded by Mr. Richard Sheppard [*F*], a vote of thanks was passed to Mr. Frederick Gibberd by acclamation and was briefly responded to.

The proceedings closed at 7.35 p.m.

Lecture, Tuesday 12 February 1952 at 6 p.m.

On Tuesday 12 February 1952 at 6 p.m. Mr. F. J. Samuely, B.Sc., A.M.I.C.E., A.M.I.Struct.E., will read a paper on 'Space Frames and Stressed Skin Construction.'

(Light refreshments will be provided before the meeting.)

Exhibition of Prize Drawings, 9 January to 5 February 1952

The Exhibition of designs and drawings submitted for the Prizes and Studentships 1952 will remain open until Tuesday 5 February between the hours of 10 a.m. and 7 p.m. (Saturdays 10 a.m. and 5 p.m.)

Annual Subscriptions and Contributions

Members' subscriptions and Students' contributions for 1952 became due on 1 January. The amounts are as follows:

	£	*s.*	*d.*
Fellows	7	7	0
Associates	4	4	0
Licentiates	4	4	0
Students	1	11	6

For members resident in the trans-oceanic Dominions who are members of Allied Societies in those Dominions, and for members resident overseas in areas where no Allied Society is available, the amounts are as follows:

	£	*s.*	*d.*
Fellows	4	4	0
Associates	3	3	0
Licentiates	3	3	0

Composition of Subscriptions for Life Membership

Fellows, Associates and Licentiates of the R.I.B.A. may become life members by compounding their respective annual subscriptions. Full details may be obtained on application to the Secretary, R.I.B.A.

Architectural Competitions—Assessors' Awards

All architects who take part in architectural competitions are reminded by the Council of the R.I.B.A. that participation in a competition is a definite acceptance of the principle that the award of the assessor is final and binding upon themselves as well as upon the promoters, and that any competitor who feels that he has real ground for dissatisfaction with an assessor's award should communicate with the Secretary of the R.I.B.A.

Further, all architects, whether competitors or otherwise, are reminded that discussion or correspondence in the public or professional press which tends to criticism or disparagement of an assessor or award cannot alter the final and binding effect of the award, but may prejudice architects and the whole competition system in the opinion of the public, and is therefore, highly undesirable.

R.I.B.A. Distinction in Town Planning

The R.I.B.A. Distinction in Town Planning is by conferment only, and is limited to Fellows, Associates, and Licentiates of the R.I.B.A.

The distinction is the highest award in Town and Country Planning that the R.I.B.A. can bestow. It is solely intended for members of the R.I.B.A. who have made an outstanding contribution in the field of large scale planning. Recommendations are submitted to the Council by a Standing Committee set up for the purpose.

Personal applications by candidates will not be entertained; the name of a candidate must be submitted by three sponsors, themselves members of the R.I.B.A., who will be required to submit the following particulars on behalf of the candidate:

(*a*) Details of professional qualifications and experience;

(*b*) Evidence of his work and experience, such evidence consisting of a list of the candidate's work, together with references to professional journals in which the works have been illustrated; and such other evidence as may assist the Committee in making their recommendation to the Council.

Nominations should be made twice annually on 1 March and 1 November, and should be addressed to the Secretary, R.I.B.A.

Members upon whom the Distinction has been conferred will be entitled to use the designation 'R.I.B.A. Distinction in Town Planning', and it is advised that this should be used in full, or the initials 'R.I.B.A. Dist. T.P.' after the initials F.R.I.B.A., A.R.I.B.A., or L.R.I.B.A., according to the class of membership to which they belong.

British Architects' Conference 1952

The British Architects' Conference this year will be held in Edinburgh from 25 to 28 June at the invitation of the Royal Incorporation of Architects in Scotland.

In view of the great demand on hotel accommodation in Edinburgh, members who intend to be present at the Conference should make their reservations at the earliest possible moment and in any case not later than 29 February. *The bookings must be made through the Secretary, R.I.A.S., 15 Rutland Square, Edinburgh*, 1, and members should communicate with him, giving details and the hotel at which they desire to stay, together with second and third preferences.

The Conference Committee have arranged provisional bookings as shown in the table on page 112.

R.I.B.A. Dinner

The R.I.B.A. Dinner in 1947 was held in the Henry Florence Hall, and owing to the limited accommodation it was unfortunately necessary to refuse tickets for a considerable number of members and their guests. The Council have

decided to hold a Dinner in 1952, and in order to ensure that no members will be disappointed it will be held at Grosvenor House, Park Lane, London, W.1, on Thursday 20 March 1952. The cost of the tickets is 32*s.* 6*d.* each, exclusive of wines, cigars, etc. Evening dress will be worn.

A form of application was enclosed with the December issue of the JOURNAL, and members are asked to send in their applications, accompanied by the necessary remittance, at the earliest possible moment.

Cessation of Membership
Under the provisions of Bye-law 21, the following have ceased to be members of the Royal Institute:

AS FELLOW
Arthur Jackson Wood.

AS ASSOCIATES
Rolfe Gilbert Booth, Thomas Henry Mace, Eric Vernon Miller.

AS LICENTIATE
Claude Eustace Larter.

Reinstatement
Mr. John Swarbrick was reinstated as a Fellow on 18 December 1951.

BOARD OF ARCHITECTURAL EDUCATION

Examination in Professional Practice and Practical Experience
The Board of Architectural Education have given exhaustive consideration to the possibility of setting up some machinery for dealing with cases of alleged hardship which may arise, particularly in the case of ex-war service candidates, as the result of the regulations for the Examination in Professional Practice and twelve months' practical experience which came into operation on 1 January 1951. The Board, after considering the matter from all possible angles, have decided with regret that it is impracticable to set up any machinery for dealing with appeals.

COMPETITION

Petrol Filling Stations
The sponsors, Messrs. Shell-Mex and B.P., Ltd., invite registered architects to submit designs in competition for petrol filling and service stations. *It is not the intention of the sponsors to erect the buildings*, but they will give wide publicity to the competition awards.

Assessors: Mr. David du R. Aberdeen, A.M.T.P.I. [*F*]; Mr. D. A. Birchett [*A*]; Mr. Frederick Gibberd, M.T.P.I. [*F*].

Premiums: Section A—Country Service Station—£300, £150: Section B—Suburban or Neighbourhood Service Station—£300, £150: Section C—Main Motorway Service Station—£300, £150.

Two additional prizes of £25 each will be awarded to designs in each section if, in the opinion of the Assessors, they contain features of special interest in design.

Last day for submitting designs: 18 April 1952.

Conditions may be obtained on application to Messrs. Shell-Mex and B.P., Ltd., Publicity Department, Shell-Mex House, Strand, London, W.C.2

Deposit £1 1*s.*

ALLIED SOCIETIES

Federation of Malaya Society of Architects
At their meeting on 11 December the Council approved the alliance of the Federation of Malaya Society of Architects, whose province is the Malay Peninsula with the exception of Singapore and Malaya, which are covered by the Institute of Architects of Malaya. The President of the Federation of Malaya Society of Architects is Mr. A. O. Coltman [*L*], and the Hon. Secretary is Mr. V. S. van Langenberg [*L*], P.O. Box 64, Kuala Lumpur, Malaya.

Wilts and Dorset Society of Architects: First Annual Dinner
On 20 November last the Wilts and Dorset Society of Architects held a dinner at the Assembly Rooms, Salisbury, to mark the inauguration of the Society as an Allied Society of the R.I.B.A. About fifty members and guests attended.

Mr. E. Wamsley Lewis [*F*], President of the Wilts and Dorset Society, was in the Chair. Also present were the Bishop of Salisbury (Dr. W. L. Anderson), Professor A. E. Richardson, R.A., M.A. (Cantab), F.S.A. [*F*], Principal of the Royal Academy School of Architecture; the Mayor and Mayoress of Salisbury, Councillor and Mrs. S. E. Chalk; Lieut.-Col. Eric Cole [*F*], President of the Wessex Federal Society of Architects; Mr. F. J. Barton [*A*], Past President of the Wilts and Dorset Society; Mr. P. A. Selborne Stringer, Clerk to the Wilts County Council; Mr. R. S. Redwood [*A*] and Mrs. Redwood; and Col. Sir Reginald Kennedy-Cox, Chairman of the Salisbury and District Society of Arts.

After the loyal toast, the Bishop of Salisbury proposed the toast of the Wilts and Dorset Society of Architects, and Mr. E. Wamsley Lewis responded. Professor A. E. Richardson then proposed the Wessex Federal Society of Architects, and Lieut.-Col. Eric Cole responded. The toast of the guests was proposed by Mr. F. J. Barton and responded to by the Mayor of Salisbury.

Essex, Cambridge and Herts Society of Architects: Annual Dinner
The Annual Dinner of the Society was held on Friday 5 October at Garon's Banqueting Hall, Southend-on-Sea. The 120 members and guests who attended were received by Mr. R. E. Enthoven, A.A.Dipl. [*F*], Vice-President, R.I.B.A., and Mrs. Enthoven, and the Society's President, Mr. D. Francis Lumley [*A*] and Mrs. Lumley. Mr. C. D. Spragg, C.B.E., Secretary, R.I.B.A., was among those present.

Mr. Lumley proposed the toast of the R.I.B.A. and expressed his thanks to Mr. Enthoven for his presence. In reply, Mr. R. E. Enthoven gave an appreciation of the work of the Essex, Cambridge and Hertfordshire Society, especially amongst students, and referred to the high standard attained in the school of architecture of the Southend-on-Sea Municipal College under Mr. J. Malcolm Scott, B.Arch. [*F*].

In proposing the toast to the Patrons of Architecture, Mr. D. A. Thomerson [*A*] made a plea that architects should bear in mind at all times the importance of the smaller client who, he maintained, had always been and would always remain a considerable influence in the development of architecture. The reply to this toast was by Sir Lancelot Keay, K.B.E., M.Arch. [*F*], Chairman of the Basildon New Town Corporation and Past President of the R.I.B.A.

The health of the guests was proposed by Mr. Harold Connolly [*F*], Essex County Architect. The reply was by Mr. S. J. McAdden, M.P. for Southend East.

After the dinner the town's illuminations, through the kindness of Alderman A. H. White, remained on later than usual to enable those attending the dinner to see them.

Bucks Society of Architects: Dinner and Dance
The Bucks Society of Architects held a dinner and dance at the Crown Hotel, Amersham, on Friday 15 December. In spite of thick fog about 70 members and guests attended and were received by the Chairman of the Society, Mr. Desmond Hall [*A*] and Mrs. Hall.

After brief but bright speeches the company enjoyed dancing until 1 a.m. During the evening a sum of £4 4*s.* was contributed to the Architects' Benevolent Society.

British Architects' Conference, Edinburgh, 25 to 28 June. Hotel accommodation provisionally booked

HOTELS	ROOMS			TARIFF	
	Double beds	Twin beds	Single beds	Bed and breakfast (each)	Bed, breakfast and dinner (each)
(*a*) Braid Hills Hotel	2	—	4	—	32/6
(*b*) Bruntsfield Hotel	5	10	10	21/–	30/–
Caledonian Hotel	5	5	10	35/–	—
do. with private bathrooms	5	5	—	42/6	—
Cockburn Hotel	4	4	8	17/6	26/–
Dean Hotel	2	5	2	17/6	25/–
George Hotel	8	15	10	25/–	—
(*c*) Green's Hotel	2	10	4	17/6	—
(*d*) Iona Private Hotel	1	4	3	20/–	26/–
Maitland Hotel	6	4	2	—	31/–
North British Hotel	20	20	20	28/6	—
Pirie's Hotel	4	8	1	12/6	17/6
Queen's Hotel	—	4	2	21/–	27/–
Roxburghe Hotel	2	6	4	23/6	31/–
Royal British Hotel	5	5	—	21/–	—
Royal Circus Hotel	—	8	—	15/6	20/6
Rutland Hotel	1	5	1	18/6	24/–
St. Andrew Hotel	6	6	3	18/–	—

NOTE:
(1) It will be appreciated that the foregoing prices are minimum prices, which may be increased by the time of the Conference.
(2) All these hotels are within ten minutes, either walking or tramcar, from the Conference Headquarters, with the exception of (*a*) which is 20 minutes by tramcar, (*b*), (*c*) and (*d*) which are 15 minutes by tramcar.
(3) Members desiring to take up rooms are requested to communicate with the Secretary, Royal Incorporation of Architects in Scotland, 15 Rutland Square, Edinburgh, 1 as soon as possible, indicating which hotel they desire, with second and third preferences.

GENERAL NOTES

Town Planning Joint Examination Board
We regret that the announcement by the Board published in the December JOURNAL was wrongly headed. This should have been 'Notes of Advice on Special Testimonies of Study'. Reference was also made to the 1951 Final Examination but these notes refer to Special Testimonies in general.

Scholarships offered by Massachusetts Institute of Technology
These scholarships are to enable British graduates in science and technology (including

architecture) to attend the 1952 summer session at the Institute from 2 June to 12 September; all expenses between those dates being met by the Institute's Student Committee. The competition is open to British citizens of accepted graduate status who have had a minimum of two years' post-graduate experience in their field of specialisation and who are not over 32 years of age.

It is pointed out that *the total number of places allocated to the United Kingdom is four.* Competition will therefore obviously be very keen.

Application forms can be obtained from the American Embassy, Cultural Office (Room 302), 41 Grosvenor Square, W.1. Closing date for the receipt of applications is 11 February next.

Architects' Registration Council of the United Kingdom

James H. Burlow, carrying on business under the name of D. Wilson and Partners, Buchanan Buildings, 24 Holborn, E.C.1, was convicted by Alderman Sir Bracewell Smith at Guildhall on 15 November and fined £20 with £5 5*s*. costs, at the instance of the Architects' Registration Council, for carrying on business under the title of 'Architect', not being registered under the Architects' Registration Acts.

It was proved in evidence that the defendant was the sole proprietor of the business and the words 'Architects and Surveyors' appeared both on his letter-paper and in several places on the doors leading to his premises.

Defendant's counsel, Mr. Gilbert Rountree, unsuccessfully pleaded Section 17 of the Architects' Registration Act 1931, relying on the employment by the defendant of an architectural superintendent in charge of his architectural work. The defendant stated in evidence that he had an agreement with his consultant architect, Mr. Alfred E. Nightingale, aged 75, who was resident at Herne Bay and attended at defendant's office as and when required, some four or five times a year.

Counsel for the prosecution, Mr. Maurice Ahern, pointed out that in order to satisfy the conditions of Section 17 the business must be owned by a firm of two or more persons, and that the Section did not apply in the case of a one-man business.

Notes from the Minutes of the Council

MEETING HELD ON 11 DECEMBER 1951

The Royal Gold Medal, 1952: The Council approved with acclamation the recommendation of the Royal Gold Medal Committee that the name of Mr. George Grey Wornum [*F*] be submitted to His Majesty the King as a suitable recipient of the Royal Gold Medal for 1952.

Honours and Awards: By a unanimous resolution, the congratulations of the Council were conveyed to the Right Hon. C. R. Attlee [*Hon. F*] on the conferment by His Majesty of the Order of Merit, and to Dr. T. A. Lodge [*F*] on the conferment by the University of Leeds of the honorary degree of Doctor of Letters.

Appointments

(A) Royal Sanitary Institute: Health Congress, Margate, 22-25 April 1952: R.I.B.A. Delegate: Mr. R. W. Paine [*A*], Chairman of the Canterbury District Chapter, South-Eastern Society of Architects.

(B) R.I.B.A. Architecture Bronze Medal: The Leicestershire and Rutland Society of Architects: R.I.B.A. Representative to serve on Jury: Mr. Peter B. Dunham [*F*], President of the Northamptonshire, Bedfordshire and Huntingdonshire Association of Architects.

(C) B.S.I. Committee USM/2: Symbols and Abbreviations: R.I.B.A. Representatives: Mr. Eric L. Bird [*A*] and Mr. Frank Woodward [*A*].

The Honorary Associateship: The Council invited Sir Hector Hetherington, K.B.E., D.L., LL.D., M.A., Principal and Vice-Chancellor of Glasgow University, to accept nomination for election to the Honorary Associateship.

Direct Election to the Fellowship: On the recommendation of the Central Council of the Institute of South African Architects, the Council elected Mr. Noel Oliver Jackson, Architect to the Administration of the Province of Natal, to the Fellowship under the provisions of the Supplemental Charter of 1925, Section IV, Clause 4.

R.I.B.A. Distinction in Town Planning: The Council conferred the R.I.B.A. Distinction in Town Planning upon Mr. William Crabtree [*F*].

The Federation of Malaya Society of Architects: Admission to Alliance: Formal approval was given to the admission of the Federation of Malaya Society of Architects to alliance with the Royal Institute under the provisions of Bye-law 69.

Housing Programme: On the recommendation of the Town and Country Planning and Housing Committee, the Council approved of representations being made to the Minister of Housing and Local Government and the Secretary of State for Scotland urging them to advocate the employment of architects on private development housing, in conformity with the general policy expressed in the Housing Manuals in regard to local authority housing.

Income Tax Allowance on Membership Subscriptions and Registration Fees: The Council approved a memorandum of evidence submitted to the Royal Commission on the Taxation of Profits and Income, which had been prepared by the Salaried and Official Architects' Committee. The substance of the memorandum was that membership subscriptions and registration fees should be admitted for allowances of income tax under Schedule E in the case of salaried architects without the requirement of any certificates from the employing authority.

Church Assembly: Repair of Churches Commission: The Council approved a memorandum of evidence submitted to the Commission on the Repair of Churches, set up by the Church Assembly, and appointed the Sub-Committee who had prepared the memorandum, Messrs. Arthur Bailey [*F*], A. B. Knapp-Fisher [*F*] and Charles Woodward [*A*] to give oral evidence to the Commission.

Design of Standardised Articles: The Council completed their review of policy in regard to the design of standardised articles, and in particular the extent to which Standard Specifications should be permitted to prescribe design. The following statement of policy on this matter has been formulated and approved by the Council:

'The Institute is not opposed to standardisation as such. It is not opposed to the formulation of standard designs for fittings and components, the form and dimensions of which would not dictate the design of the ultimate composition. Even in more important details such as windows, the design of which must have a considerable effect on the ultimate composition, the Institute, while averse to the standardisation of design in general, recognises the limitations of modern manufacturing requirements and will give guidance on the standardisation of such details in a manner to admit of the greatest possible variety in combination, and provided always that the present official position is maintained, namely, that the use of British Standards is not obligatory.'

Membership: The following members were elected: as Fellows, 10; as Associates, 329.

Students: 163 Probationers were elected as Students.

Applications for Election: Applications for election were approved as follows: *Election 8 January 1952:* as Hon. Associates, 2; as Fellows, 6; as Associates, 73; as Licentiates, 8. *Election 1 April 1952:* as Fellows, 2; as Associates, 8.

Application for Reinstatement: The following application was approved: as Associate, Alfred Ernest Mayhew.

Resignation: The following resignation was accepted with regret: David John Lloyd [*A*].

Applications for Transfer to Retired Members' Class under Bye-law 15: The following applications were approved: as Retired Fellows, John Tallents Wynyard Brooke, Robert Stanley Dixon; as Retired Licentiates, Alexander Clark Meston, Thomas Henry Murray, Harold Overall Samson, Stanley William Smith.

Obituary: The Secretary reported with regret the death of the following members: Henry Greville Montgomery, J.P. [*Hon. Associate*], John Stockwin Cleland, M.B.E. [*F*]. Mr. Cleland was a past President-in-Chief of the Institute of South African Architects, and had represented that body on the Council. William Adam Forsyth [*F*]. Mr. Forsyth was a past member of the Council, the Art Standing Committee and the Official Architecture Committee, and had served as an Assistant of the Board (Board of Examiners) and an Hon. Examiner. He also served for very many years as the R.I.B.A. representative on the National Trust. Philip Appleby Robson [*F*], Francis William Deas [*Retd. F*], George Hastwell Grayson [*Retd. F*]. Mr. Grayson was a past President of the Liverpool Architectural Society and had represented that body on the Council. He was also a past member of the following Committees: Practice, Literature, Fellowship Drawings, Selection and General Purposes, Registration, Official Architecture, Shortage of Skilled Building Labour, Housing Work Panels. He was also a past Chairman of the Oxfordshire Society of Architects, and had represented that body on the Allied Societies' Conference. William Campbell Jones [*Retd. F*]. Mr. Campbell Jones was R.I.B.A. Donaldson Medallist 1881-82. William Austin Daft [*A*]. Mr. Daft was a past member of the Council and the Art Standing Committee. He was also a past President of the Berks, Bucks and Oxon Architectural Association and had represented that body on the Allied Societies' Conference. John Ivor Price Jones [*A*]. Mr. Ivor Jones was for many years Hon. Secretary of the South Wales Institute of Architects. He was also a past President of the South Wales Institute, past Chairman of the Allied Societies Secretaries Conference, and a past member of the Unification Committee. Andrew Rollo [*A*]. Mr. Rollo was Institute Medallist (Drawings) 1903, and was also awarded the R.I.B.A. Diploma in Town Planning. John Nicholas Patrick Conlan [*L*], Sam Dodson [*L*], William John Wilsdon [*L*], Alfred Womersley [*L*], Hugh Ovenden [*Retd. L*].

By resolution of the Council the sympathy and condolences of the Royal Institute have been conveyed to their relatives.

Membership Lists

ELECTION: 8 JANUARY 1952

The following candidates for membership were elected on 8 January 1952.

AS HON. ASSOCIATES (2)

Bilsland of Kinrara, The Lord, M.C., D.L., LL.D., Buchlyvie, Stirlingshire.
Pevsner: Nikolaus Bernhard Leon, M.A., Ph.D., F.S.A.

AS FELLOWS (6)

Harrison: William Thomas [*A* 1944], Liverpool.
Kelly: Howard Lawrence [*A* 1931].
Simpson: Robert Alison Crighton, T.D., B.A. [*A* 1929], Duns, Berwickshire.
Thompson: Gerald Leopold [*A* 1929], Selby.
Tolson: Jack Ransom, Dipl.Arch. (Leeds), A.M.T.P.I., Dipl.T.P. (Leeds) [*A* 1930], Oxford.
and the following Licentiate, who is qualified under Section IV, Clause 4 (*c*) (ii), of the Supplemental Charter of 1925:
Thomas: George Frederick, Birmingham.

AS ASSOCIATES (73)

Avenell: Anthony, Bournemouth.
Baker: Hugh Wesley, Southampton.
Beaton: Charles, Dip.Arch. (Abdn.), Aberdeen.
Benoy: Kenneth William, Havant.
Booth: Anthony John Gorton, Dip.Arch. (The Polytechnic).
Bowles: Winifred Delmer (Miss), Nottingham.
Cockburn: David Bethune, D.A. (Edin.), Portobello.
Cocker: Philip Stanley, Bolton.
Denholm: Peter Campbell, Gourock.
Dixon: Maurice George.
Dodson: Robert George, Dip.Arch. (Leics.), Birstall, Leicestershire.
Dymond: John Hodgson, Dip.Arch. (Cardiff), Newport, Mon.
Economou: Stavros N.
Edwards: Elizabeth Rosemary (Miss), Whitstable.
Elsey: Samuel George, Manchester.
Elstub: Dorothy Margaret (Miss), Southam, Warwicks.
England: Philip George, Dip.Arch. (Manchester).
Evans: Marjorie Elizabeth (Miss), D.A. (Edin.).
Evans: William Angus, Dip.Arch. (Cardiff), Barry.
Eyre: John, A.R.I.C.S.
Forsyth: Robert, D.A. (Glas.), Glasgow.
Fox: Owen William, Cambridge.
Gallagher: John Matthew, Ewell.
Gibbons: Ross Smith, Dip.Arch. (Manchester), Bolton.
Greenwood: Arthur, B.Arch. (Sydney), Hyde.
Greig: William Murray, D.A. (Dundee), Carnoustie.
Groocock: Brian Wilson, Dipl.Arch. (Leeds), Leeds.
Hancock: Peter Reginald Lawrence, Dipl.Arch. (Oxford), Oxford.
Harris: Raymond Govette, Cambridge.
Harrison: Peter, Dip.Arch. (Manchester), Manchester.
Hayes: George Andrew, Oldham.
Hennings: Michael Hugh.
Howarth: James McIntosh, Dip.Arch (Manchester) Oldham.
Keegan: Brinley James, Dip.Arch. (Cardiff), Penarth.
Koppenhagen: Ann Pamela (Miss), Dipl.Arch. (U.C.L.).
Lasham: Humphrey John, Dip.Arch. (The Polytechnic).
Linfield: Gerald Arthur, Dipl.Arch. (Oxford), Oxford.
Locke: Thomas, D.A. (Glas.), Aylesbury.
Lopacki: Richard, Dip.Arch. (Nottm.), Cardiff.
McGuire: Hilda Patricia (Miss), B.Arch. (L'pool), Belfast.
McIntosh: John Malcolm, B.A. (Arch.) (Lond.).
Marsh: Frank Henry [*L*].
Mills: Kenneth James, Dip.Arch. (Cardiff), Cardiff.
Mitchell: Thomas Brown, Grimsby.
Moir: Stanley Rice, Dip.Arch. (Abdn.), Aberdeen.
Moody: Alan Edward.
Moorby: Richard Preston.
Muddiman: Ann Elizabeth (Mrs.), B.A. (Arch.) (Lond.).
Noble: Eric Robery, Richmond, Surrey.
Nussbaum: Bruno.
Pegg: Graham Morris, Great Yarmouth.
Rew: David, D.A. (Glas.), Glasgow.
Richardson: Norman, Durham.
Sanderson: Peter Anthony Calley.
Sane: Sadashiv Dhondo.
Searle: Peter Arthur, Dipl.Arch. (U.C.L.), Ewell.
Smith: Brian David.
Smith: Ernest Brian, Stockport.
Spicer: George Edward.
Stanford: Frederick James Harding.
Stevenson: Charles Cushnie, D.A. (Glas.), Glasgow.
Stothard: Doreen Marguerite (Miss), Dip.Arch. (Dunelm).
Stoughton-Harris: Pamela Mary Winifred (Miss), B.A. (Arch.) (Lond.), Woking.
Swann: Henry George.
Swann: Patrick Graham, D.A. (Edin.), Aberdour.
Tabraham: Graham Dennis, Barnet.
Tear: Geoffrey Irons, Lyndhurst.
Tiktin: Harold, Westcliff-on-Sea.
Tomalin: Margaret (Mrs.), Manchester.
Turner: John Douglas, A.A. Dipl.
Turner: Keith Allerton [*L*].
West: Richard Fraser, M.C., Brighton.
Wynne-Williams: Ronald Ormonde.

AS LICENTIATES (8)

Baines: Arthur, Birmingham.
Boundy: Sidney, Exeter.
Cheasley: Francis Harman,
Hesketh: Henry David.
Marriott: Eric Charles.
Sweatman: Herbert Buchanan, Gillingham.
Turner: Richard.
Woodward: Lionel Orford, York.

ELECTION: 4 MARCH 1952

An election of candidates for membership will take place on 4 March 1952. The names and addresses of the candidates with the names of their proposers, found by the Council to be eligible and qualified in accordance with the Charter and Bye-laws, are herewith published for the information of members. Notice of any objection or any other communication respecting them must be sent to the Secretary, R.I.B.A., not later than Monday 4 February 1952.

The names following the applicant's address are those of his proposers.

AS HON. ASSOCIATE (1)

Hetherington: Sir Hector (James Wright), K.B.E., D.L., LL.D., Litt.D., The University, Glasgow. Proposed by the Council.

AS ASSOCIATES (24)

The name of a school, or schools, after a candidate's name indicates the passing of a recognised course.

Benson: Patricia Ann (Mrs.), D.A. (Edin.) (Edinburgh Coll. of Art: Sch. of Arch.), Walpole House, Chiswick Mall, W.4. R. F. Jordan, Henry Elder, Trenwith Wills.

Bigwood: Thomas, A.A. Dipl. (Arch. Assoc. (London): Sch. of Arch.), 1 Ruskin Mansions, Queens Club Gardens, West Kensington, W.14. M. R. Hofler, Henry Elder, Arthur Korn.

Bullock: Wilfred Albert, Dip.Arch. (Cardiff) (Welsh Sch. of Arch.: The Tech. Coll., Cardiff), 41 Grosvenor Street, Canton, Cardiff. Lewis John, Harry Teather, C. F. Jones.

Burden: Peter John [Final], 45c Old Dover Road, Canterbury, Kent. H. Anderson, Capt. H. C. Ashenden, Major F. A. Perren.

Cheyne: Donald St. Clair, Dip.Arch. (The Polytechnic) (The Poly, Regent Street, London: Sch. of Arch.), 6 Halifax Street, Sydenham, S.E.26. J. S. Walkden, David Jenkin, W. A. S. Lloyd.

Chitty: Dennis Walter [Final], 'The Beeches', Crawley, Sussex. G. M. Aylwin, A. G. Sheppard Fidler, K. E. Black.

Duffy: Patrick Desmond [Final], 20 Mount Ephraim Lane, Streatham, S.W.16. Applying for nomination by the Council under Bye-law 3 (*d*).

Farquharson: Gordon McQuattie, D.A. (Dundee) (Dundee Coll. of Art: Sch. of Arch.), Primrose Cottage, Rattray, Blairgowrie, Perthshire, Scotland. John Needham, T. H. Thoms, G. C. Young.

Forbes: Peter Gordon, D.A. (Edin.) (Edinburgh Coll. of Art: Sch. of Arch.), 39 Maitland Street, Dunfermline, Scotland. Applying for nomination by the Council under Bye-law 3 (*d*).

Fox: Jack Rothbury [Special Final], Walmley House, Springhill Park, Lower Penn, nr. Wolverhampton. Stuart Bentley, J. W. Wilson, F. H. Jones.

Gammon: John Roy, Dip.Arch. (Cardiff) (Welsh Sch. of Arch.: The Tech. Coll., Cardiff), 5 Coronation Street, Aberkenfig, Bridgend. Lewis John, Harry Teather, C. F. Jones.

Greig: William Alexander, Dip.Arch. (Abdn.) (Aberdeen Sch. of Arch.: Robert Gordon's Tech. Coll.), 7 Main Street, New Deer, Aberdeenshire. E. F. Davies, A. B. Gardner, J. G. Marr.

Guest: Patrick, D.A. (Edin.) (Edinburgh Coll. of Art: Sch. of Arch.), 3 Old Market Place, Warminster, Wiltshire. Basil Spence, W. H. Kininmonth, E. V. Harris.

Ham: Arthur John Laurence [Final], 43 Belvedere Road, Taunton, Somerset. R. O. Harris, C. G. Toy, R. M. Hewlett.

Hayler: Martin Edward [Final], 13/50 The Drive, Hove, Sussex. K. E. Black, F. R. Steele, and applying for nomination by the Council under Bye-law 3 (*d*).

Knowles: George Edward [Special Final], 57 Windermere Road, Noctorum, Birkenhead, Cheshire. Felix Holt, and the President and Hon. Sec. of the Liverpool Architectural Society under Bye-law 3 (*a*).

Lambeth: Dennis Frederick [Final], High Street, Burford, Oxon. F. R. Cox, Sir Thomas Bennett, L. J. Bathurst.

Murrell: Harry Charles [Final], 2 Hilldrop Terrace, Market Street, Torquay, Devon. G. R. Todd, H. C. Powell, W. E. Wolff.

Neilson: John Sydney Medcalf, Dipl.Arch. (Northern Polytechnic) (Northern Poly. (London): Dept. of Arch.), Bulls Cross Farm, Theobalds Park, Waltham Cross, Herts. T. E. Scott, E. Palmer, S. F. Burley.

Nutt: David Eric, Dipl.Arch. (Oxford) (Sch. of Tech. Art and Commerce, Oxford: Sch. of

Archb), 19 Buckingham Street, Oxford. E. A. L. Martyn, R. G. Brocklehurst, E. M. Rice.

Prakash: Aditya [Final], c/o Messrs. L. H. Ross and Partners, 79 West Regent Street, Glasgow, C.2. L. H. Ross, P. V. Mauger, J. A. Coia.

Tait: Alastair Plaxton, D.A. (Edin.) (Edinburgh Coll. of Art: Sch. of Arch.), Architects' Department, County Hall, Hertford, Herts. A. H. Mottram, W. H. Kininmonth, J. R. McKay.

Watson: George, D.A. (Glas.) (Glasgow Sch. of Arch.), Windyshields, Lanark, Scotland. Prof. W. J. Smith, L. W. Hutson, John Steel.

Watt: Alexander Newlands, Dip.Arch. (Abdn.) (Aberdeen Sch. of Arch.: Robert Gordon's Tech. Coll.), 108 Seafield Road, Aberdeen. E. F. Davies, A. B. Gardner, J. G. Marr.

ELECTION: 6 MAY 1952

An election of candidates for membership will take place on 6 May 1952. The names and addresses of the overseas candidates, with the names of their proposers, are herewith published for the information of members. Notice of any objection or any other communication respecting them must be sent to the Secretary, R.I.B.A., not later than Saturday 19 April 1952.

AS ASSOCIATES (13)

The names following the applicant's address are those of his proposers.

Fourie: Paul Toby [Special Final], c/o Messrs. Stucke, Harrison and Smail, P.O. Box 2271, Johannesburg, Transvaal, S. Africa. Major P. N. Logan, V. S. Rees-Poole, W. A. Macdonald.

Ghista: Phiroz Jehangir [Final], 645 Dhobitlao, Bombay, India. Prof. Claude Batley, P. A. d'Avoine, D. W. Ditchburn.

Gray: Richard Beddison, B.Arch. (Sydney) (Passed a qualifying Exam. approved by the R.A.I.A.), 5 Berry Street, North Sydney, N.S.W., Australia. Prof. H. I. Ashworth, Prof. A. S. Hook, E. L. Thompson.

Hoe: Ho Kok (Passed a qualifying Exam. approved by the R.A.I.A.), 591 Pacific Highway, Chatswood, N.S.W., Australia. W. R. Laurie, Prof. F. E. Towndrow, Prof. Denis Winston.

Kotasthane: Madhukar Vinayak [Final], Jamnabai Mansion, Sandhurst Road Tram Terminus, Bombay, 4, India. S. H. Parelkar, H. N. Dallas, M. K. Jadhav.

Lorimer: Alan Keith Sigley, B.Arch. (Sydney) (Passed a qualifying Exam. approved by the R.A.I.A.), 5 Berry Street, North Sydney, N.S.W., Australia. Prof. H. I. Ashworth, Prof. A. S. Hook, E. L. Thompson.

Middleton: John Lindsay (Aberdeen Sch. of Arch.: Robert Gordon's Tech. Coll.), 84 Woodleigh Park, Singapore. E. F. Davies, A. B. Gardner, W. I. Watson.

Nevin: Richard Matthew [Final], Box 1033, Ottawa, Ontario, Canada. John Kryton, E. A. Remnant, P. Hickey.

Panchal: Jaykrushna Gopalji [Final], c/o Messrs. Master Sathe and Bhuta, 34-38 Hamam Street, Fort, Bombay, India. C. M. Master, S. H. Parelkar, H. N. Dallas.

Parikh: Harilal Bhagwanjee [Final], 19/251 Government Colony, Ghod Bunder Road, Khar, Bombay, 21, India. C. M. Master, S. H. Parelkar, M. K. Jadhav.

Rao: Devanahalli Venkanna Raghavendra, B.Sc., B.E. (Mysore), B.Arch. (L'pool) (Liverpool Sch. of Arch.: Univ. of Liverpool), Assistant Town Planner, Secretariat, Patna, Bihar, India. Prof. L. B. Budden, B. A. Miller, F. X. Velarde.

Rustomji: Rustom Sohrab [Final], c/o Messrs. D. H. Daruvala and Co., Mercantile Chambers, Bunder Road, Karachi, Pakistan. C. M. Master, M. K. Jadhav, G. B. Mhatre.

Vijayakar: Mukund Mothabhoy [Final], Plot No. 433, 14th Road, Khar, Bombay, 21, India. Prof. S. S. Reuben, S. H. Parelkar, H. N. Dallas.

Obituaries

William Austin Daft [*A*] died on 27 November 1951 at the age of 67.

Mr. Daft was a past President of the Berks, Bucks and Oxon Architectural Association and had represented that body on the Allied Societies Conference. He was also a past member of the Council and of the Art Standing Committee.

Mr. T. Lawrence Dale [*F*] has contributed the following note:

'By the passing of William Austin Daft on 27 November 1951 the Berks, Bucks and Oxon Association has lost one of its most lively and genial members. Successively Chairman of the Oxford Society, Hon. Secretary to, and later, President of the B.B.O.A.A., he devoted many years to the service of his professional brethren and the R.I.B.A. Before the education of students was organised he did much to promote their training; this he believed was best done by articles rather than by schools. He took pupils without premiums and had the interests of students ever at heart. Energetic as he was in the concerns of the profession, he spent himself freely in local government, from his Parish Council to the Rural District Council. He held appointments in the Oxford Preservation Trust, the Mid-Oxon Regional Planning Committee, the Oxford Chamber of Trade and in many others, and was a Past Master of two masonic lodges.

'Articled to Arthur Marshall of Nottingham, he travelled widely as a student and commenced practice in Oxford in 1921. In 1934 he took into partnership Mr. R. S. Cave, who now carries on the practice. His executed works include the county offices, Oxford, county schools at Banbury and Chipping Norton and several elementary schools, business premises in Oxford and considerable housing in Oxfordshire and the Cotswolds, together with a large domestic practice.

'He was a witty speaker and produced amusing squibs in response to the increasing number of controls, one entitled "You can't build that there 'ere." At the same time he gave his advice freely when it was sought. By his death a wide circle of friends has lost a good companion.'

R. Sims Cave [*L*], Mr. Daft's partner, writes of him as follows:

'When in 1910, as a very callow youth, I became junior pupil to the late Colonel Stallard, then County Surveyor and Architect to the Oxfordshire County Council, his senior architectural assistant was a young Associate, 24 years of age—William Austin Daft; and we pupils were his responsibility. An imperial sheet of cartridge was pinned on the board allotted to me, and I was told to rule it with 26 double guide lines ⅝ in. apart. W. A. D. then drew capital letters down the left-hand margin and said; "When you have finished the sheet, you can rule another one". That was his standard of draughtsmanship.

'Another thing he insisted upon was that we all should visit the jobs at least once a week, and if we could not describe the state of progress on our return there were rude remarks. He never went all out for the big plums, and used to say, "If I can do a little job well, that will do for me". His great delight was to design the small houses peculiar to the Cotswold country, especially the plans. He would often say, "If the plan is right, the elevations work themselves out in this kind of house". A debatable point, but one with which many will agree. He was fond of sketching in pencil with a minimum of shading, and the office is still lined with his sketches of French churches and cathedrals. When he began practice on his own account in 1921 he always paid his pupil's expenses for a week abroad every summer, advising them what to see and sketch.

'An extremely even tempered man, I can remember his losing his temper but once in some 40 years over a drawing office matter.

'His interests were wide, and of late years he gave much of his time to many local government bodies, and to the village of Yarnton, where he lived. For sport, he liked nothing better than dapping the Irish lakes, and was a keen gardener. Although suffering from a malignant disease for the last two years, he continued his activities to the last possible moment, displaying a cheerfulness and fortitude I have never seen surpassed. He will be mourned by a very wide circle of friends and acquaintances.'

George Hastwell Grayson, M.A. (Cantab.) [*Retd. F*] died on 23 November last at the age of 80.

Mr. Grayson was at Emmanuel College, Cambridge, and later carried out a certain amount of work for the University. He was responsible for the Hall, Selwyn College, and also for work on Westcott House and Trinity Hall. After coming down he trained with Messrs. Willink and Thicknesse, Liverpool, and most of the rest of his architectural work was in and around that city. He built premises for Lloyds Bank Ltd. in Victoria Street and Bold Street, Liverpool, the Southport War Memorial and Birkdale Central School.

Mr. Grayson was President of the Liverpool Architectural Society from 1912 to 1914 and represented that Society on the Council. He was also for a time, after he had gone to live near Oxford in his retirement, Chairman of the Oxfordshire Society of Architects, and he represented the Society on the Allied Societies Conference. Mr. Grayson was also a past member of the following Committees: Practice, Literature, Fellowship Drawings, Selection and General Purposes, Registration, Official Architecture, Shortage of Skilled Building Labour, Housing Work Panels.

His partner, Mr. Leonard Barnish [*F*], writes of him:

'I was in partnership with Hastwell Grayson from 1912-1933—twenty-one very happy years. In these early days he was hefty; he played in the forward line for Birkenhead Park R.F.C. and he loved heavy work in his garden.

'He was a very tolerant man; he was more than that—I have never met another architect so free from professional jealousy and envy. He was a perfect committee man, would spend days on some research for his committee and then disclaim the credit. He was very helpful to me in my formative years and I feel I owe a great deal to him.

'On retiring he lived at Great Milton, seven miles from Oxford, in an old Cotswold house with a large and very beautiful garden, in which

he, together with his wife, did prodigious work on the layout. He built an open air swimming bath, much to his neighbours' benefit, fed through a carp pond from a stream. He loved to entertain Rhodes scholars and other undergraduates here.

'He was a keen member of the Berks Archaeological Society. He frequently attended R.I.B.A. and C.P.R.E. Annual Conferences. He kept up interest also in the National Trust, the Oxford Historical Society, the Oxford Preservation Trust, and the Town and Country Planning Association. Each spring he went to Greece with the Hellenic Travellers Club, sometimes taking an undergraduate or fellow archaeologist as his guest. He did another cruise in the autumn. In all this he showed his love of gardens, of buildings, of travel, and — not least — his love of his fellow travellers.'

Reginald Eyre [*A*], Hon. Secretary to the Institute of Architects of Malaya, died on 31 May 1951 at the early age of 32.

Mr. Eyre, who trained at the Nottingham School of Architecture, went to Singapore in 1946 and in 1948 became a partner in the firm of Palmer and Turner. He was responsible among other things for the Hong Kong and Shanghai Banks in Singapore and Penang. Shortly before his death Mr. Eyre completed drawings for the competition for a new Post Office Savings Bank in Kuala Lumpur. Unhappily he did not live to know that he was awarded second premium.

Sidney Vincent North [*Retd. F*] died on 7 March 1951 at the age of 79.

Mr. North was trained in his father's office and at the Architectural Association School of Architecture, and set up practice in London in about 1902. Details of his earlier work are not known, but in later years he was responsible for extensions to St. Joseph's Missionary College, Liverpool, and for various commercial buildings, including the premises of the Goldsmiths and Silversmiths Company Ltd., Regent Street, London.

Members' Column

This column is reserved for notices of changes of address, partnership and partnerships vacant or wanted, practices for sale or wanted, office accommodation, and personal notices other than of posts wanted as salaried assistants for which the Institute's Employment Register is maintained.

PRACTICES AND PARTNERSHIPS

Mr. Peter Bartlett, Dip. Arch. [*A*], and **Mr. Gordon Graham,** Dip. Arch. [*A*], have opened an office at Castle Gate Chambers, Castle Gate, Nottingham, and would be pleased to receive trade catalogues, etc.

Mr. Wm. Binney [*A*] wishes to announce that he has now opened an office at Cowper's Chambers, Corney Square, Penrith, Cumberland, where he will be pleased to receive trade catalogues, etc. This office is in addition to that already occupied at The Cloisters, Appleby, Westmorland (Appleby 195).

Messrs. Henry Budgen and Co. [*F*], Westminster House, 95/97 St. Mary Street, Cardiff, announce that the partnership between **Percy Graham Budgen** [*F*] and **Edward Ralph Budgen,** F.R.I.C.S., was dissolved on 31 December 1951 upon which date the business of the firm ceased entirely. **Mr. Percy Graham Budgen** has taken into partnership **Messrs. J. L. Webber, N. J. Auckland** [*A*] and **R. A. Furlong** [*A*], who will practise under the style of **P. G. Budgen and Partners** at 95/97 St. Mary Street, Cardiff, and at London and Swansea.

Mr. Leslie Chandler [*A*] has commenced private practice at 193 London Road, North End, Portsmouth, where he will be pleased to receive trade catalogues, etc.

Messrs. S. Chapman and L. G. Cohen (Mr. S. Chapman and Mr. L. G. Cohen [*A*]), 40 Burg Street, Cape Town, South Africa, have taken into partnership **Mr. A. G. Versino** [*A*] with effect from 1 January 1952. The practice will continue at the same address under the style of **S. Chapman, L. G. Cohen and A. G. Versino.**

Mr. C. Y. Dawbarn [*A*] and **Mr. R. C. Blair** [*A*] have entered into an association and will practise under the style of **Dawbarn and Blair** [*A*/*A*], 8A Rumford Place, Liverpool, 3. (CENtral 8757.)

Mr. K. J. Kenny [*A*] has opened an office at 25 Hill Street, Newry, and will be pleased to receive trade catalogues, etc.

Mr. P. S. Key [*A*] has entered into partnership with **Mr. E. Stephen Wright** [*A*] and is practising at 1 Windsor House, P.O. Box 320, Umtali, Southern Rhodesia, under the style of **E. Stephen Wright and Key.**

Messrs. Hammond and Jack [*L*], of 130/131 Salisbury House, Finsbury Circus, London, E.C.2, have taken into partnership **Mr. K. A. Saunders** [*L*]. The title of the firm and their address remain unchanged.

The practice of **Mr. Basil Sutton** and **Mr. John Griffin** [*F*/*A*], of Newbury, and that of **Mr. Patrick Sweetnam** and the late **John Osborne** [*A*/*L*], of Hungerford, have been merged. The new partnership will be known as **Sutton, Griffin and Sweetnam** [*F*/*A*/*A*], and will be carried on from 87 Northbrook Street, Newbury, and 107 High Street, Hungerford. They will be pleased to receive catalogues at both offices.

CHANGES OF ADDRESS

Mr. E. S. W. Atherton, A.M.T.P.I. [*A*] has transferred his office to 7 St. John's Road, Harrow, Middlesex (HARrow 0836).

The Central Architectural Department of the **British Aluminium Company Limited** has now been transferred to the company's new Head Office at Norfolk House, St. James's Square, London, S.W.1, where the Chief Architect, **Mr. D. A. Murray** [*L*] will be pleased to receive trade catalogues.

Mr. Ian Cameron [*A*] has removed to 40 Parliament Street, Nottingham. (Nottingham 43425.)

Mr. Derrick Rigby Childs [*A*] has changed his address to 3 Manor House, Marylebone Road, N.W.1. (PADdington 9488.)

Mr. E. Jerden Cook [*A*] has removed to 10 Queen Street Chambers, Maidenhead (Maidenhead 3517).

Until further notice the address of **Mr. Geoffrey Davies** [*A*] will be c/o Messrs. Page and Steele, 72 St. Clair Avenue West, Toronto, Ontario, Canada.

The new address of **Mr. Frederic W. Hagell** [*F*] is Hydro Hotel, Eastbourne, Sussex.

Mr. Cecil Lush [*A*] has removed to Craven House, 121 Kingsway, London, W.C.2. (CHAncery 2332.)

The address of **Mr. R. Milton** [*A*] is now 6 Royal Crescent, Harrogate, Yorks.

Mr. David E. Morrison [*A*] has removed to new premises at 8 Park Street, Mayfair, London, W.1. (GROsvenor 7522.)

Mr. Geoffrey Ridley, O.B.E. [*F*], has removed to 24 Victoria Park, Dover.

Mr. Peter Shaw-Parkinson [*A*] is removing to Western Australia, and all correspondence after 31 January should be sent c/o Messrs. Hobbs, Winning and Leighton, 104 St. George's Terrace, Perth, Western Australia.

PRACTICES AND PARTNERSHIPS WANTED

Fellow (age 40) with creative contemporary spirit and wide experience in England and on the Continent, sailing to Canada during April, will be pleased to hear from a Canadian firm of architects with a view to partnership or position as Senior Assistant leading to partnership. Particulars and references exchanged in confidence. Box 3, c/o Secretary, R.I.B.A.

Partnership vacant with view to early succession in architect's established practice (London). Box 4, c/o Secretary, R.I.B.A.

Associate (45) with 27 years' varied experience seeks partnership or position leading thereto in well established practice in England or Africa. Available immediately due to dearth of building works. Box 5, c/o Secretary, R.I.B.A.

Associate desires partnership in southern half of England. Good general experience; English; age 39; some capital available; own car. Box 89, c/o Secretary, R.I.B.A.

FOR SALE AND WANTED

Member wishes to exchange ARCHITECT'S JOURNAL information sheets complete up to May 1951 for a complete set of ARCHITECT AND BUILDING NEWS data sheets. Box 1, c/o Secretary, R.I.B.A.

For Sale. *Later Renaissance—England,* Belcher and Macartney, Vol. I and II, Batsford. *The Spires and Towers of England,* Charles Wickes, 3 Vols. in one. MDCCCLIX. *Charakteristische Details Hugo Licht,* Werke, Berlin, VIII Band Lfg.1 1910, VIII Band Lfg.2 1910, VIII Band Lfg.3 1910, VIII Band Lfg.4 & 5. *Die Architektur des XX Jahrhunderts* 1909, 9. Jahrgang, 4. Heft 1909, 4. Heft 1909-10, 1. Heft 1909. *Ornamental Details of Italian Renaissance,* Middleton and Carden MDCCCC. Box 2, c/o Secretary, R.I.B.A.

For Sale by the Architects' Benevolent Society on behalf of an architect's widow. Three imperial boards, flush ebony edges, pre-war, £1 10*s.* each. Two imperial tee squares, celluloid edges, ebony edged stocks (Stanley) £1 8*s.* and £1 5*s.* Antiquarian tee square, ebony edge (Stanley) £2 5*s.* Half-imperial tee square, mahogany, celluloid edge, gunmetal inset stock (Stanley) £1 5*s.* Two 5 ft. rods in leather case, with connecting ferrule, £2 10*s.* One 5 ft. rod 17*s.* 6*d.* Mahogany box, slotted and containing various scales including 12 in., 6 in. and 5 in. ivory £2 5*s.* 50 ft. Chesterman tape £1 2*s.* 6*d.* Mahogany box with 30 hog's hair bristle and camel hair brushes, new and old, £2. Inlaid mahogany paint box (with drawer) by Reeves and Inwood with block colours, five small brushes, etc., £2 5*s.* Mahogany paint box by Reeves and Sons, block colours, palettes, etc., £1 10*s.* Proportional dividers, 9½ in. new condition, in leather case, £3. Adjustable set square, 10 in., 12*s.* 6*d.* Steel tape, 66 ft., by Elliott Bros., 15*s.* Ebony centrolinead by Wyatt, two arms, 36 in. and 24 in., £2 15*s.* Can be seen at the A.B.S. offices, 66 Portland Place, W.1.